

# Seattle Arena



## Addendum to Final Environmental Impact Statement

Date Published: October 29, 2015

City of Seattle  
Department of Planning and Development

---

The intent and purpose of this Final Environmental Impact Statement is to satisfy the procedural requirements of the State Environmental Policy Act (RCW 43.21c) and City Ordinance 114057. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action; in its final form it will accompany the final decision on the proposal.



**Addendum to Final Environmental Impact Statement  
for  
Seattle Arena**

City of Seattle  
Department of Planning and Development

Prepared in Compliance with the  
State Environmental Policy Act of 1971  
Chapter 43.21c, Revised Code of Washington

SEPA Rules, Effective April 4, 1984  
Chapter 191-11, Washington Administrative Code

City of Seattle SEPA Ordinance 114057 Seattle Municipal Code Chapter 25.05

Date of Issue: October 29, 2015



# Introductory Memo

This document is an Addendum to the Final Environmental Impact Statement (FEIS), prepared under the direction of DPD. Its purpose is to provide site-specific information for the pedestrian facilities surrounding the proposed Seattle Arena site in the Stadium District, south of downtown Seattle (SoDo).

This EIS Addendum adds information to the Draft and Final EISs that were prepared for the Seattle Arena. This Addendum is not an authorization for action, nor does it constitute a decision or recommendation for action. This EIS Addendum will accompany the Draft and Final EIS through the City's review processes of the Proposed Seattle Arena project. It will be considered by City officials in making the necessary permitting or approval decisions, including: (1) whether the City and County will participate in development of ArenaCo's proposed Seattle Arena; (2) whether the City will issue land use approvals and the nature of impact mitigation that may be required; and (3) whether to approve a street vacation.

Key environmental issues and options that were analyzed in the Draft and Final EISs for the Seattle Arena were primarily potential impacts to traffic and transportation and, to a lesser extent, construction and operational impacts on the other elements of the environment including geology/soils, air quality, climate, water, conservation and renewable resources, scenic resources, land use, recreation, historic resources, public services and utilities.

By agreement between the City of Seattle and King County, the City is serving as the SEPA lead agency for this proposal. The Draft and Final EISs for the Seattle Arena are adopted for the purposes of this environmental review.

This EIS Addendum provides additional site-specific information concerning the pedestrian facilities surrounding the proposed Seattle Arena SoDo site. The EIS Addendum is organized into three major sections. The Fact Sheet starting on page ii provides an overview of the proposed action and location, permits required, and points of contact. Section 1 provides a summary of the additional information and a summary comparison of the additional information as compared to the information contained in the FEIS. Section 2 provides both the relevant information on pedestrian facilities that was contained in the May 2015 Final EIS and the additional information on pedestrian facilities.

# Fact Sheet

## Project Title

Seattle Arena

## Proponent

WSA Properties III, LLC

## Location

The proposal is located in the Stadium District south of the existing Safeco Field. The site address is 1700 First Avenue S., Seattle, Washington

## Proposed Action

The Proposed Action is the future construction of an approximately 750,000 square foot, 20,000-seat spectator sports facility (Seattle Arena) to be located at 1700 First Avenue South, Seattle. The Project would include the demolition of eight existing structures of approximately 128,087 square feet, and grading would occur for construction. The Project includes a proposed street vacation of the portion of Occidental Avenue South between South Holgate and South Massachusetts Streets, and a realignment of S. Massachusetts Street between Occidental Avenue S and 1st Avenue S. Parking for the facility is proposed to be provided by use either of existing off-site parking or the construction of new off-site parking on a lot south of Holgate Street (referred to in this document as the “South Warehouse site”). The Proposed Action includes all regulatory, transactional and other decisions necessary to accomplish the project.

The principal on-site alternative is an 18,000-seat arena at the SoDo site. This EIS Addendum contains information only applicable to the SoDo site and does not change information previously disclosed for the alternative at the KeyArena and Memorial Stadium locations in the vicinity of Seattle Center. As with the Final EIS, no proposal exists to locate an arena at either of those Seattle-Center vicinity locations.

## Lead Agency

City of Seattle Department of Planning and Development

Responsible Official: Diane Sugimura, Director  
City of Seattle Department of Planning and Development  
Seattle Municipal Tower, 700 Fifth Avenue, Suite 2000  
PO Box 34019  
Seattle, WA 98124-4019

Contact Person: John Shaw, Senior Transportation Planner  
City of Seattle Department of Planning and Development

Seattle Municipal Tower, 700 Fifth Avenue, Suite 2000  
PO Box 34019  
Seattle, WA 98124-4019  
Telephone: (206) 684-5837  
Fax: (206) 233-7902

Master Use Permit No.: 3014195

**Addendum; SEPA Documents Adopted** This EIS Addendum adds information to the Draft and Final EISs for the Seattle Arena.

## Required Approvals

Preliminary investigation indicates that the following permits and/or approvals could be required for the proposal. Additional permits/approvals may be identified during the review process.

### **State of Washington**

#### Labor & Industries

- Elevator Permits

### **Puget Sound Clean Air Agency**

- Asbestos Survey
- Demolition Permit

### **King County**

- Transaction Documents with City of Seattle and ArenaCo

### **City of Seattle**

#### City Council

- Transaction Documents with King County and ArenaCo
- Street Vacation (vacation of portion of Occidental Avenue South)

#### Department of Planning and Development

- Draft and Final EIS Approval
- Master Use Permit
- Grading Permit/Shoring Permit
- Demolition Permit
- Building Permit
- Mechanical Permits
- Electrical Permits
- Structural Permit
- Certification of Occupancy
- Energy Code Approval
- Drainage Control Plan Review and Approval

Seattle Public Utilities

- Water connection
- Sewer connection

Seattle Fire Department

- Fire Code Inspections

**Seattle-King County Department of Health**

- Plumbing Permits

## **Date of Issue of the Draft EIS**

August 15, 2013

## **Date of Issue of the Final EIS**

May 7, 2015

## **Date of Issue of the EIS Addendum**

October 29, 2015

## **Approximate Date of Final Actions**

Final actions will include DPD's issuance of a Master Use Permit (MUP), Seattle City Council approval of the street vacation, and City and King County approval of transaction documents. These actions will follow the issuance of the EIS Addendum and are expected to occur in 2015 and 2016.

## **Document Availability and Cost**

Copies of this EIS Addendum have been distributed to agencies and organizations noted in Section 5, Distribution List of this document.

Copies of this document are also available for review at the City of Seattle Department of Planning and Development Public Resource Center, located in Suite 2000 of Seattle Municipal Tower in Downtown Seattle (700 Fifth Avenue) and at the following branch of the Seattle Public Library:

- Central Library (1000 – 4th Avenue)

A limited number of complimentary copies of this EIS Addendum may be obtained from the Department of Planning and Development Public Resource Center while the supply lasts. Additional copies may be purchased for the cost of reproduction.

## **Authors and Principal Contributors to this EIS Addendum**

The EIS Addendum has been prepared under the direction of the Department of Planning and Development. Research and analysis was provided by the following consulting firms:



AECOM Technical Services (formerly URS Corporation) (Environmental analysis and document preparation)  
1501 4th Avenue, Suite 1400  
Seattle, WA 98101-1616

The Transpo Group (Transportation analysis)  
11730 118th Avenue NE, Suite 600  
Kirkland, WA 98034-7120

## **Location of Background Data**

City of Seattle  
Department of Planning and Development  
Seattle Municipal Tower, 700 Fifth Avenue, Suite 2000  
PO Box 34019  
Seattle, WA 98124-4019

# Acronyms

ADA	Americans with Disabilities Act
AVO	average vehicle occupancy
BNSF	Burlington Northern Santa Fe
CBD	Central Business District
C&D	construction and demolition
CIP	Capital Improvement Program
CMP	construction management plan
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CONCACF	Confederation of North, Central American and Caribbean Association Football
CMP	Construction Management Plan
CPTED	Crime Prevention Through Environmental Design
CSMP	Comprehensive Safety and Mobility Plan
CSO	combined sewer overflow
CTMP	Construction Transportation Management Plan
CTS	Comprehensive Transportation Strategy
cu yds	cubic yards
DAHP	Department of Archaeology and Historic Preservation
dB	decibels
dba	A-weighted decibels
DEIS	Draft Environmental Impact Statement
DPD	Department of Planning and Development
DPM	diesel particulate matter
DRB	Design Review Board
EBI	Eliot Bay Interceptor
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FEIS	Final EIS
FRA	Federal Railroad Administration
GHG	greenhouse gas
GMA	Growth Management Act
gpm	gallons per minute
GRH	Guaranteed Ride Home
gsf	gross square feet
HCM	highway capacity manual
HOV	high occupancy vehicle
I-5	Interstate (Highway) 5
I-90	Interstate (Highway) 90

I&M	inspection and maintenance
ITS	intelligent transportation system
KCWTD	King County Wastewater Treatment Division
kVA	kilovolt amperes
kW	kilowatt
lbs/day	pounds per day
LEED	Leadership in Energy and Environmental Design
$L_{eq}$	equivalent sound level
$L_{max}$	maximum sound level
LOS	level of service
LTCP	Long Term Control Plan
MBH	million BTU/hour
MCER	maximum considered earthquake
MIC	Manufacturing and Industrial District
MLB	Major League Baseball
MLS	Major League Soccer
MOTTF	Maintenance of Traffic Task Force
mph	miles per hour
msl	mean sea level
MTCO <sub>2e</sub>	Metric tons CO <sub>2</sub> equivalent
MUP	Master Use Permit
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standards
NBA	National Basketball Association
NC3	Neighborhood Commercial 3
NFL	National Football League
NHL	National Hockey League
NHPA	National Historic Preservation Act
NO <sub>x</sub>	nitrogen oxide
OSE	Office of Sustainability and Environment
p/min/ft	pedestrians per minute per foot
PM <sub>10</sub>	particulate matter less than 10 micrometers in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 micrometers in diameter
ppm	parts per million
PSCAA	Puget Sound Clean Air Agency
psi	pounds per square inch
PSRC	Puget Sound Regional Council
SDC	Seattle Design Commission
SDOT	Seattle Department of Transportation
SEPA	State Environmental Policy Act
sf	square feet

SFD	Seattle Fire Department
SIFF	Seattle International Film Festival
SIG	State Intermodal Gateway
SLU	South Lake Union
SMC	Seattle Municipal Code
SoDo	South Downtown
Sounders FC	Sounders Football Club
SOV	single occupancy vehicle
SPD	Seattle Police Department
SPU	Seattle Public Utilities
SR	State Route
SRI	solar reflectance index
ST	Sound Transit
SUAI	Significant unavoidable adverse impact
TCP	traffic control plan
tcy	total cubic yards
TDM	transportation demand management
TEAM	Techniques for Effective Alcohol Management
TEU	twenty-foot equivalent units
TMP	Transportation Management Plan
TOD	transit oriented development
U-link	University Link Light Rail
UP	Union Pacific
UW	University of Washington
v/c	volume to capacity
VMS	variable message signs
VOC	volatile organic compound
VPH	vehicles per hour
WAC	Washington Administrative Code
WAMU Theatre	Washington Mutual Theatre
WNBA	Women's National Basketball Association
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries

# Table of Contents

<b>Section 1 - Summary .....</b>	<b>1-1</b>
1.1 Project .....	1-1
1.2 Site and Site Vicinity .....	1-1
1.3 Summary of Changes Made to Information Contained in May 2015 Final EIS.....	1-3
1.3.1 Summary of Additional Pedestrian Facility Information .....	1-3
1.3.2 Updated Pedestrian Forecasts .....	1-4
1.3.3 Summary of Potential Impacts and Major Conclusions.....	1-5
<b>Section 2 - Additional Information About Environmental Impacts and Mitigation Measures.....</b>	<b>2-1</b>
2.1 Site Plan Components for Pedestrians .....	2-1
2.1.1 Summary of Site Plan Components Identified in May 2015 FEIS .....	2-1
2.1.2 Summary of Updated Site Plan Components for Pedestrian Facilities.....	2-1
2.2 Event Analysis Cases.....	2-2
2.2.1 Event Analysis Cases Used in May 2015 FEIS .....	2-2
2.2.2 Event Analysis Cases Based on Updated Environmental Information.....	2-6
2.3 Pedestrian Impact Methodology.....	2-8
2.3.1 Methodology Used in May 2015 FEIS .....	2-8
2.3.2 Methodology Used Based on Updated Environmental Information.....	2-10
2.4 Affected Environment .....	2-10
2.4.1 Affected Environment for Pedestrians Described in May 2015 FEIS .....	2-10
2.4.2 Affected Environment for Pedestrians Based on Updated Environmental Information.....	2-13
2.5 Impacts .....	2-13
2.5.1 Pedestrian Forecasts .....	2-13
2.5.2 Operation Impacts of the No Action Alternative at Alternative 2 and 3 Site.....	2-19
2.5.3 Impacts of the Proposed Project (Alternative 2) – Stadium District 20,000-Seat Arena .....	2-19
2.5.4 Operation Impacts of Alternative 3 – Stadium District 18,000-Seat Arena .....	2-26

2.6 Occidental Avenue South Street Vacation (As It Relates to Pedestrians).....	2-26
2.6.1 Occidental Avenue South Street Vacation Impacts Described in May 2015 FEIS.	2-26
2.6.2 Occidental Avenue South Street Vacation Impacts Based on Updated Environmental Information .....	2-29
2.7 Mitigation Measures .....	2-30
2.7.1 Mitigation Measures for Pedestrian Impacts Identified in May 2015 FEIS.....	2-30
2.7.2 Updated Mitigation Measures for Pedestrian Impacts Based on Additional Environmental Information .....	2-31
2.8 Secondary and Cumulative Impacts .....	2-32
2.8.1 Secondary and Cumulative Impacts Identified in May 2015 FEIS .....	2-32
2.8.2 Updated Secondary and Cumulative Impacts Based on Additional Environmental Information .....	2-32
2.9 Significant Unavoidable Adverse Impacts.....	2-32
2.9.1 Significant Unavoidable Adverse Impacts Identified in May 2015 FEIS.....	2-32
2.9.2 Updated Significant Unavoidable Adverse Impacts Based on Additional Environmental Information .....	2-33
<b>Section 3 - References .....</b>	<b>4-1</b>
<b>Section 4 - Glossary .....</b>	<b>5-1</b>
<b>Section 5 - Final EIS Distribution List .....</b>	<b>6-1</b>
5.1 State Agencies.....	6-1
5.2 Regional Agencies.....	6-1
5.3 Local Agencies .....	6-1
5.4 Libraries .....	6-1
5.5 Newspapers .....	6-1

## List of Figures

Figure 1-1 Site Location Alternative 2 and Alternative 3 .....	1-2
Figure 2-1 Stadium District Key Pedestrian Routes .....	2-9
Figure 2-2 Stadium District Pedestrian Facilities .....	2-11
Figure 2-3 Stadium District No Action and Alternative 2 Case S1 Post-Event Pedestrian Volumes .....	2-15
Figure 2-4 Stadium District No Action and Alternative 2 Case S2 Post-Event Pedestrian Volumes .....	2-16

**Figure 2-5 Stadium District No Action and Alternative 2 Case S3 Post-Event Pedestrian Volumes ..... 2-17**

**List of Tables**

**Table 1 1 Summary of Potential Impacts and Major Conclusions ..... 1-8**

**Table 1 2 Summary of Potential Mitigation Measures ..... 1-12**

**Table 1 3 Summary of Secondary and Cumulative Impacts ..... 1-14**

**Table 1 4 Summary of Significant Unavoidable Adverse Impacts ..... 1-14**

**Table 2-1 Arena Event Attendance Ranges ..... 2-4**

**Table 2-2 Stadium District Event Cases for Analysis ..... 2-5**

**Table 2-3 Comparison of Post-Event Hourly Pedestrian Volumes ..... 2-18**

**Table 2-4 Pedestrian Flow Assessments – Comparison of No Action and Alternative 2 ..... 2-23**

**Table 2-5 Occidental Avenue S Street Vacation Comparative Analysis ..... 2-28**

**Table 2-6 Occidental Avenue S Street Vacation Comparative Analysis (Updated) ..... 2-29**





# Section 1 - Summary

## 1.1 Project

WSA Properties III, LLC (ArenaCo) has applied to the City of Seattle for the future construction of an approximately 750,000 sf, 20,000-seat spectator sports facility (Seattle Arena). ArenaCo's objective is to build and operate a 20,000-seat Seattle Arena for NBA and NHL home teams on a site located at 1700 – 1st Avenue S., Seattle, Washington.

The ArenaCo Project would include the demolition of eight existing structures of approximately 128,087 sf, and grading would occur for construction. The Project includes a proposed street vacation of the portion of Occidental Avenue S. between S. Holgate and S. Massachusetts Streets, and a realignment of S. Massachusetts Street between Occidental Avenue S and 1st Avenue S. Parking for the facility is proposed to be provided by use of either existing off-site parking or the construction of new off-site parking on a lot south of Holgate Street (referred to in this document as the "South Warehouse site"). The Proposed Action includes all regulatory, transactional and other decisions necessary to accomplish the Project.

The City and County's objective is to determine whether to participate in ArenaCo's private proposal to build and operate the Seattle Arena for NBA and NHL home teams. While the City and County could decide to pursue participation in a project to build and operate such an arena at a location different than the ArenaCo site, including the Memorial Stadium or KeyArena sites considered in this Environmental Impact Statement (EIS), no proposal for the City and County to participate in such a project currently exists other than ArenaCo's proposal to build and operate the Arena on its South Downtown (SoDo) property.

## 1.2 Site and Site Vicinity

The site of the Proposed Project (Alternative 2) and Alternative 3, is located within South Downtown (SoDo) in the Stadium Transition Area, south of Safeco Field and CenturyLink Field. SoDo includes the areas of Pioneer Square, the International District, the Stadium Transition Area (Overlay District) and the North Duwamish neighborhood. Warehouses, small businesses, and parking now occupy the site. The site is surrounded by similar uses. Newer development has occurred in parcels to the west of 1st Avenue S. Newer uses include midrise office and mixed commercial uses with street-front retail and restaurants. To the north of the site is the Safeco Field parking garage. Recently, land uses in the immediate vicinity are trending away from warehouse to office, light manufacturing with storefront retail, and other small businesses associated with Safeco Field, and CenturyLink Field and Exhibition Center. See Figure 1-1 Site Location, Alternatives 2 and 3.

BNSF Railroad and Amtrak facilities are located to the east of the existing stadiums and the site of the Proposed Project (Alternative 2) and Alternative 3. Facilities include passenger and freight rail lines as well as several structures that support those activities. BNSF's loading yard is located one block to the west. Port of Seattle container shipping facilities are located west of the loading yard.



Source: Google Earth Pro

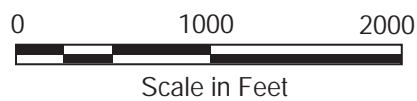


Figure 1-1  
**Site Location**  
**Alternative 2 and Alternative 3**

## 1.3 Summary of Changes Made to Information Contained in May 2015 Final EIS

This EIS Addendum provides additional information concerning the pedestrian facilities surrounding the proposed Seattle Arena SoDo site.

Separately from the proposed Seattle Arena project, the City's Seattle Department of Transportation (SDOT) is considering design changes to Holgate Street between 1st Avenue S and 3rd Avenue S. The traffic analysis contained in the Draft and Final EIS was based on the existing lane configuration for this portion of Holgate. The existing lane configuration includes five lanes; two east bound, and three westbound (one right-turn only, one through, and one left-turn only) between 1st Avenue S and Occidental Avenue S. It transitions to four lanes (two eastbound and two westbound) where it crosses the railroad tracks. Draft design drawings show various potential realignments, including a design that would reduce the number of lanes to three lanes. At the time of preparation of this Addendum, no decision has been made by SDOT as to the future design or alignment of Holgate Street. Any changes to Holgate Street will be made independently of the Seattle Arena project, and SDOT's decision-making process will include an analysis of potential changes to traffic capacity and flow that could result from alternative alignments and lane configurations.

### 1.3.1 Summary of Additional Pedestrian Facility Information

A summary of the additional information on pedestrian facilities contained in Section 2 of this Addendum is as follows:

The FEIS analysis was based on a pedestrian zone (contiguous unobstructed walking surface) width on the east side of 1st Avenue S. between S. Massachusetts Street and S. Holgate Street of approximately 19.5 feet (without tables and seating) during peak event flow periods. The updated analysis of pedestrian capacity on this segment of 1st Avenue S. assumes a pedestrian zone with a physical width of 23 feet. Both the FEIS analysis and the updated analysis include provision for "shy" distances of 1.5 feet from building edge and 2 feet from vertical landscaping (such as tree trunks) or permanently installed street furniture, effectively reducing the area in which pedestrians would walk by 3.5 feet.

The proposal has been updated based on guidance from SDOT to provide pedestrian capacity along the 1st Avenue S. frontage as follows:

- **1st Avenue S. Street Frontage** - the pedestrian zone necessary to accommodate pedestrian flows on the east side of 1st Avenue S. between S. Massachusetts Street and S. Holgate Street shall be comprised of:
  - 23 feet of contiguous unobstructed (no permanent intrusion) walking surface between the building façade and any landscaped/tree/permanent street furniture zone
  - The 23-foot unobstructed space may be located within the public right-of-way (public sidewalk), or on a combination of public sidewalk and private property

- **Events in excess of 15,000 attendees (inclusive of the proposed Arena and all stadia and exhibition halls to the north)** – the 23-foot pedestrian zone shall be kept free of all temporary obstacles (such as chairs, tables, etc.) to allow for unimpeded pedestrian flow
- **On low attendance event days (equal to or less than 15,000 attendees)** - the required unobstructed pedestrian zone shall be a minimum of 18.5 feet. Any use of public sidewalk area for outside dining (tables, chairs, railings, etc.) must be approved through a street use permit issued by SDOT and will not be allowed to encroach upon the required minimum 18.5-foot pedestrian zone.
- **On non-event days (inclusive of all stadia and exhibition halls)** - the required unobstructed pedestrian zone shall be a minimum of 10 feet. In addition to providing a widened pedestrian zone, the Proponent is working with the City to include a pedestrian bridge over the railroad tracks on S. Holgate St. As a result, no specific updating of analysis or discussion of crossing conditions is included in this update.

### 1.3.2 Updated Pedestrian Forecasts

The No Action Case S2 and S3 pedestrian forecasts were updated to reflect the higher pedestrian demands. The methodology reflected in this analysis includes:

- Pedestrian volume from June 2015 Occidental Avenue S. pedestrian count (i.e., 2,800 pedestrian per hour, source: Heffron Transportation, Inc., 2015 – *Technical Memorandum – New Seattle Arena*) was proportioned to reflect the Case S2 and S3 attendance levels.
- Pedestrian volume on the remaining study segments was estimated by applying the factor identified in the updated Occidental Avenue S. pedestrian volumes to all applicable sidewalk sections
- Consistent with the FEIS, Alternative 2 Cases S2 and S3 forecasts were determined by adding Arena pedestrian demands associated with travel demand / mode split estimates to the No Action Case S2 and S3 forecasts.
- For Alternative 2, the Occidental Avenue S. pedestrian demands between S. Massachusetts and S. Holgate Streets were shifted to 1st Avenue S. between S. Massachusetts and S. Holgate Streets as a result of the project and associated street vacation. It was assumed that 75 percent of the pedestrians would utilize the east sidewalk of 1st Avenue S. and the remaining 25 percent the west sidewalk of 1st Avenue S.
- For analysis purposes, all hourly pedestrian volumes were broken down to the highest 15-minute increment, consistent with the prescribed methodology. The updated count data had a peaking factor of 65 percent that was applied to the analysis; the FEIS count data was lower.

### 1.3.3 Summary of Potential Impacts and Major Conclusions

The FEIS considered the dual event cases S2 (Arena plus either a Mariners or Sounders game to have a 40,500 person attendance at Safeco Field) and the triple event case S3 (Arena plus Mariners or Sounders plus small event at CenturyLink Field) to have a 47,500 person attendance at Safeco plus 5,000 person attendance at CenturyLink. During the study for the FEIS, pedestrian counts were conducted and factored up to a design day attendance level condition. However, for the higher attendance game recently counted, a higher concentration of parking was located to the south than captured in the data from the FEIS. As a result, pedestrian volumes on the sidewalk sections in the FEIS under-estimated the pedestrian levels expected for events of the sizes identified for analysis.

Analysis contained in Section 2 of this Addendum identifies the changes in the analysis associated with the revised pedestrian forecasts and the revised sidewalk width adjacent to the Arena along 1st Avenue S. The analysis also updates the pedestrian forecasts and related analysis along all of the sidewalk sections disclosed in the FEIS, including those along 4th Avenue S. Pedestrian flow rates are measured relative to the capacity to provide a “level of crowding”. Sidewalk conditions are characterized as free flow (<10 p/ft/min), restricted (11-23 p/ft/min), or severely restricted (>23 p/ft/min). The City of Seattle does not have an adopted standard.

The May 2015 FEIS identified only one sidewalk segment that was predicted to operate under severely restricted conditions, the east side of 1st Avenue S. between S. Massachusetts Street and S. Atlantic Street. Flows along the east side of 1st Avenue S between S. Massachusetts Street and S. Holgate Street were found to be slightly restricted based on the estimated pedestrian zone of 16 feet.

The revised pedestrian forecasts performed for this Addendum show that without the Arena, severely restricted flow rates would occur at four SoDo sidewalk segments caused by events at Safeco or Century Link Fields (see No Action under Case S2 and Case S3 on Table 2-4 in Section 2 and discussion below). With the Arena, severely restricted flow rates are forecast within six sidewalk segments, including the pedestrian zone immediately in front of the Arena on the east side of 1st Avenue S.:

- **1st Avenue S. between S. Holgate Street and S. Massachusetts Street (East Side).** Cases S2 and S3 would create a calculated drop in pedestrian performance from free flow to severely restricted due to simultaneously exiting events at the Arena and one or more of the other stadia or exhibition halls to the north. Given seasonal schedules for the primary tenants, together with the typical start and ending times of events, this condition would not typically occur.
- **1st Avenue S. between S. Massachusetts Street and S. Atlantic Street (East Side).** Case S1: with Arena Only; Case S2: No Action (with Mariners) and with-project; Case S3: No Action and with-project. The level of pedestrian congestion associated with a Case S1 Arena-only event would be less than the NoAction condition

associated with a Mariner game of 40,500 persons. Occidental Avenue S. between S. Massachusetts St. and S. Atlantic St. provides a parallel route option.

- **1st Avenue S. between S. Massachusetts Street and S. Atlantic Street (West Side).** Case S2 and S3 result in severely restricted flow ratings under either No Action or with project conditions. The sidewalks in this segment are generally 15-17 feet wide, however the effective width is limited by occasional planters and abutting buildings along portions of the sidewalk segment. As in the east side of the street, the No Action condition associated with an event at Safeco in Case S2 results in a worse pedestrian flow than that associated with a capacity event at the proposed Arena, Case S1.
- **4th Avenue S. between S. Atlantic Street and S. Holgate Street (West Side). Similar to the section of 1st Avenue S. between S. Holgate Street and S. Massachusetts Street,** Cases S2 and S3 would create a calculated drop in pedestrian performance from restricted to severely restricted due to simultaneously exiting events at the Arena and Safeco. Given typical schedules, this condition is not expected to occur, both from the perspective of seasonal overlap as well as the hours that events in each venue would start and stop.
- **4th Avenue S. between S. Atlantic Street and S. Holgate Street (East Side).** Severely restricted pedestrian conditions are calculated for this sidewalk segment under both No Action and with-project condition's for Cases S2 and S3. In both cases, the No Action condition associated with the multiple events at CenturyLink and Safeco Fields would exceed the congestion level identified for the with-project condition for Case S1.
- **4th Avenue S. between S. Walker Street and S. Holgate Street (West Side).** Severely restricted pedestrian conditions are calculated for this sidewalk segment under both No Action and with-project condition's for Cases S2 and S3. In both cases, the No Action condition associated with the multiple events at CenturyLink and Safeco Fields would exceed the congestion level identified for the with-project condition for Case S1.

The August 2015 Heffron memorandum draws conclusions that the increased pedestrian congestion (characterized as pedestrian levels of service in the Severely Restricted range) represented by these higher peak pedestrian flows would create an unsafe pedestrian condition adjacent to the proposed Arena. This would suggest that pedestrian flows would exceed the sidewalk width and result in pedestrians walking in the street. While the analysis summarized above identifies sections of sidewalks that would be severely restricted immediately following the ending of one or more events, it does not reach a conclusion that impacts of the Arena would result in an unsafe condition for pedestrians. As summarized above and shown on Table 2-4 in Section 2, severely restricted pedestrian connections occur today on both sides of 1st Avenue S. between S. Atlantic Street and S. Massachusetts Street, on the east

side of 4th Avenue S. between S. Atlantic Street and S. Holgate Street, and on the west side of 4th Avenue S. between S. Holgate Street and S. Walker Street from pedestrians leaving Safeco and/or CenturyLink Fields at the end of events. These severely restricted pedestrian conditions resulting in substantially slowed progress occur multiple times per year , and are not necessarily a hazardous condition. Impacts of the Arena would be controlled through an Event Management Plan, similar to those used by the existing stadia, and would not create unsafe conditions for pedestrians.

**Table 1-1  
Summary of Potential Impacts and Major Conclusions**

Environmental Element	Construction and Operation Phases	Alternative 1 – No Action	Information Contained in May 2015 FEIS		Additional Pedestrian Facility Information	
			Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena	Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena
Transportation - Operations	Operation – Pedestrians	<p><b>Stadium District</b> Connectivity between Stadium Station, SoDo Station, and International District routes to and from the 1st Avenue S./S. Holgate Street area would be consistent with existing conditions. Planned improvements impacting pedestrian routes in the area include multiuse paths as part of the Alaskan Way Viaduct, the First Hill Streetcar, and the railing crossing improvements along S. Holgate Street.</p> <p>Overall, pedestrian connectivity along the five key travel routes would remain good with improvements along 1st Avenue S., Railroad Way, and Alaskan Way creating a more pedestrian-friendly environment.</p> <p>With No Action, there would continue to be a poor connection across S. Atlantic Street when coming to and from the northeast, missing and narrow sidewalks along 3rd and 4th Avenues S., and</p>	<p>Sidewalks along the site frontage would be widened as part of Alternative 2 development.</p> <p>1st and 4th Avenues S.: The calculation of pedestrian flow rates suggests that during the peak 15 minutes associated with a capacity event egress sidewalk, capacities may be exceeded. This could be mitigated via sidewalk widening, rerouting more pedestrians to Occidental Avenue immediately north of the site, or providing more onsite attractions and amenities to reduce peaking characteristics of post-event egress.</p> <ul style="list-style-type: none"> <li>Given the location of the doors to the Arena (northwest and southwest corners of the building) and the 24-foot wide sidewalk or 16-foot wide pedestrian zone proposed along the frontage, flows along 1st Avenue S. between S. Massachusetts and S. Holgate Streets would be slightly restricted.</li> <li>Flow rates on 1st Avenue S.</li> </ul>	<p>With 10 percent less seats, this would result in a 10 percent reduction in the overall pedestrian demand as compared to the Alternative 2. Overall transportation impacts for Alternative 3 would be slightly less than those described for Alternative 2 and the analysis of Alternative 2 fully encompasses any transportation impacts that would occur as a result of developing Alternative 3.</p>	<p>The pedestrian zone along the site frontage on the east side of 1st Avenue S. would be widened to 23 feet, an effective width of 19.5 feet.</p> <ul style="list-style-type: none"> <li>Given the location of the doors to the Arena (northwest and southwest corners of the building) and the 23-foot wide pedestrian zone proposed along the frontage, flows along 1st Avenue S. between S. Massachusetts and S. Holgate Streets would be severely restricted.</li> </ul> <p>With the revised pedestrian forecasts, severely restricted flow rates are forecast within the following sidewalk segments and analysis cases:</p> <ul style="list-style-type: none"> <li>1st Avenue S between S. Holgate Street and S. Massachusetts Street (East Side)– Cases S2 and S3 would create a calculated drop in pedestrian performance from free flow to severely restricted due to simultaneously exiting events at the Arena</li> </ul>	<p>Impacts associated with Alternative 3 would be similar to those described for Alternative 2 above for all event cases. The incremental impact of Alternative 3 would be approximately 10 percent less than that associate with Alternative 2, as a simple ratio of the reduced capacity of an Arena under Alternative 3 compared to Alternative 2. No change in substantive analysis or conclusions would occur as a result of Alternative 3 compared to those described for Alternative 2.</p>



**Table 1-1 (Continued)**  
**Summary of Potential Impacts and Major Conclusions**

Environmental Element	Construction and Operation Phases	Alternative 1 – No Action	Information Contained in May 2015 FEIS		Additional Pedestrian Facility Information	
			Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena	Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena
		<p>south of S. Atlantic Street. Planned industrial projects north and south of Seattle would result in additional at-grade train crossings on S. Holgate Street with no improvements to pedestrian facilities or provision of pedestrian crossing controls.</p> <p>There is an existing pedestrian access issue along S. Holgate Street related to the lack of storage and pedestrian control at the train crossings.</p> <p>An analysis of No Action Cases S1, S2, and S3 shows This analysis indicates that the sidewalks along 1st and 4th Avenues S. are adequate to accommodate pedestrian demand.</p> <p>Pedestrian queuing analysis at the S. Holgate Street train crossing shows that with higher event demands related to No Action Case S3, queues would be greater than could be accommodated between the railroad tracks and 1st Avenue S.</p>	<p>between S. Atlantic and S. Massachusetts Streets would exceed acceptable levels on the east side for all Alternative 2 scenarios and on the west side under Cases S2 and S3 multi-event scenarios, but this segment would be acceptable under Case S1 or an Arena-only event.</p> <ul style="list-style-type: none"> <li>• Pedestrian flows along 4th Avenue S. between S. Atlantic and S. Walker Streets would generally experience free flow except on the west side of 4th Avenue S between S. Atlantic and S. Holgate Streets where the addition of the Arena would result in some crowding due to a constrained sidewalk section. There is capacity on the east side, so pedestrians wanting to avoid crowds could use these facilities.</li> </ul> <p>S. Holgate Street: Alternative 2 would result in substantially more pedestrians along S. Holgate Street than characterized for the No Action conditions during both event ingress and</p>		<p>and one or more of the other stadia or exhibition halls to the north. Given seasonal schedules for the primary tenants, together with the typical start and ending times, this condition would not typically occur.</p> <ul style="list-style-type: none"> <li>• 1st Avenue S. between S. Massachusetts St. and S. Atlantic St. (East Side). – Case S1: with Arena Only; Case S2: No Action (with Mariners) and with-project; Case S3: No Action and with-project. .</li> <li>• 1st Avenue S. between S. Massachusetts St. and S. Atlantic St. (West Side). Case S2 and S3 result in severely restricted flow ratings under either NoAction or with project conditions. As in the east side of the street, the No Action condition associated with an event at Safeco in Case S2 results in a worse pedestrian flow than that associated with a capacity event at the proposed Arena, Case S1.</li> <li>• 4th Avenue S. between S. Atlantic St. and S. Holgate</li> </ul>	

**Table 1-1 (Continued)**  
**Summary of Potential Impacts and Major Conclusions**

Environmental Element	Construction and Operation Phases	Alternative 1 – No Action	Information Contained in May 2015 FEIS		Additional Pedestrian Facility Information	
			Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena	Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena
			<p>egress. Conflicts between pedestrians and trains would increase with Alternative 2. The introduction of an Arena at this location would substantially increase and concentrate demands over currently observed levels. With increases in event-related pedestrian volumes associated with Alternative 2 and planned increases in train activity, pedestrian access issues would result in the future along S. Holgate Street. Accommodating the large storage needs for pedestrians, particularly during post-event egress, would be difficult.</p> <ul style="list-style-type: none"> <li>• Pedestrian queues and storage needs would be substantially more than characterized for the No Action conditions.</li> <li>• Pedestrian queues attributable to waiting for passing trains would range from approximately 900 to 8,000 pedestrians, depending on the duration of the blockage.</li> <li>• Sidewalk storage to accommodate queues based on current blockage</li> </ul>		<p>Street (West Side). Cases S2 and S3 would experience a calculated drop in pedestrian performance from restricted to severely restricted due to simultaneously exiting events at the Arena and Safeco. Given typical schedules, this condition would rarely occur.</p> <ul style="list-style-type: none"> <li>• 4th Avenue S. between S. Atlantic St. and S. Holgate Street (East Side). Severely restricted pedestrian conditions are calculated for this sidewalk segment under both NoAction and with-project condition's for Cases S2 and S3. In both cases, the No Action condition associated with the multiple event condition exceed the congestion level identified in relation to the with-project condition for Case S1.</li> <li>• 4th Avenue S. between S. Walker St. and S. Holgate Street (West Side). Severely restricted pedestrian conditions are calculated for this sidewalk</li> </ul>	

**Table 1-1 (Continued)**  
**Summary of Potential Impacts and Major Conclusions**

Environmental Element	Construction and Operation Phases	Alternative 1 – No Action	Information Contained in May 2015 FEIS		Additional Pedestrian Facility Information	
			Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena	Alternative 2 – Proposed Action – Stadium District 20,000 Seat Arena	Alternative 3 – Stadium District 18,000 Seat Arena
			<p>levels of around 10 minutes would be over 500 square-feet.</p> <ul style="list-style-type: none"> <li>Blockages up to 45 minutes (representing increased activity) would result in the need for approximately 2,120 square-feet of storage to accommodate just an Arena event.</li> </ul>		<p>segment under both No Action and with-project condition's for Cases S2 and S3. In both cases, the No Action condition associated with the multiple event condition exceed the congestion level identified in relation to the with-project condition for Case S1.</p> <p>Holgate Street Railroad Crossing Considerations. The pedestrian demands associated with the Case S2 and S3 conditions would be greater than those identified in the FEIS. The Proponent has agreed to fund the construction of a pedestrian bridge to provide safe access across the railroad tracks, and impacts would remain below a level of significantly unavoidable adverse impacts.</p>	
	Operation – Occidental Street Vacation	No impact	<p><b>Pedestrians/Bicycles:</b>            Pedestrians and bicycles would be rerouted to 1st Avenue S. along the site frontage. Low non-event volumes would not result in a significant impact.</p>	Same as Alternative 2	Same as disclosed in the May 2015 FEIS.	Same as Alternative 2

**Table 1-2  
Summary of Potential Mitigation Measures**

Environmental Element	Construction and Operation Phases	Mitigation Measures Contained in May 2015 Final EIS	Updated Mitigation Measures for Pedestrian Facilities
Transportation - Operation	Operation	<p><b>Alternatives 2 and 3 – Required Mitigation or Mitigation Included in Project Proposal</b></p> <ul style="list-style-type: none"> <li>• <b>Pedestrian Improvements.</b> Implementation of the following pedestrian improvements would contribute to increased safety and / or improved connectivity between the Arena and pedestrian connections to transit and / or offsite parking areas.               <ul style="list-style-type: none"> <li>○ The north-south crossing of S. Atlantic Street at Occidental Avenue S. would be improved by:                   <ul style="list-style-type: none"> <li>▪ Providing manual traffic control at the north-south crossing before, during, and after Arena events, and / or,</li> <li>▪ Developing a more-permanent improvement such as adding a staircase to the south side of S. Atlantic Street connecting to 3rd Avenue S.</li> </ul> </li> <li>○ To improve the connectivity and safety of the east-west pedestrian connection between the Arena site and 4th Avenue S., ArenaCo would be required to develop or implement one of the following:                   <ul style="list-style-type: none"> <li>▪ Construction of a pedestrian bridge from the Arena along S. Holgate Street to the east spanning such that it clears the easternmost railroad tracks. This would reduce the need for surface management pedestrian traffic control measures before or after events. The pedestrian bridge should directly connect to the Arena with a pathway wide enough to assure free flow of pedestrians during ingress and egress conditions.</li> <li>▪ Alternatively, the applicant may provide operating shuttles or jitneys that follow a fixed route on a fixed headway that link the Washington State Ferry terminal, Link</li> </ul> </li> </ul> </li> </ul>	<p><b>Alternatives 2 and 3 – Required Mitigation or Mitigation Included in Project Proposal</b></p> <ul style="list-style-type: none"> <li>• <b>Pedestrian Improvements.</b> Implementation of the following pedestrian improvements would contribute to increased safety and / or improved connectivity between the Arena and pedestrian connections to transit and / or offsite parking areas.               <ul style="list-style-type: none"> <li>○ The north-south crossing of S. Atlantic Street at Occidental Avenue S. would be improved by:                   <ul style="list-style-type: none"> <li>▪ Providing manual traffic control at the north-south crossing, and / or,</li> <li>▪ Developing a more-permanent improvement such as adding a staircase to the south side of S. Atlantic Street connecting to 3rd Avenue S.</li> </ul> </li> <li>○ To improve the connectivity and safety of the east-west pedestrian connection between the Arena site and 4th Avenue S., the Proponent has agreed to to develop and implement the following:                   <ul style="list-style-type: none"> <li>▪ Construction of a pedestrian bridge from the Arena along S. Holgate Street to the east spanning such that it clears the easternmost railroad tracks. This would reduce the need for surface management pedestrian traffic control measures before or after events. The pedestrian bridge would directly connect to the Arena with a pathway wide enough to assure free flow of pedestrians during ingress and egress conditions.</li> <li>▪ If the Arena construction is completed prior to the development of the pedestrian bridge, the Proponent may</li> </ul> </li> </ul> </li> </ul>
	Physical Capacity and Safety Improvements		

**Table 1-2 (Continued)  
Summary of Potential Mitigation Measures**

Environmental Element	Construction and Operation Phases	Mitigation Measures Contained in May 2015 Final EIS	Updated Mitigation Measures for Pedestrian Facilities
		<p>Light Rail and Transit Stations to / from the Arena. The intent of these jitneys and / or shuttles would be to provide an incentive for walk-on ferry passengers, transit users and persons parking in more remote offsite parking spaces. A specific shuttle plan would be developed as part of the TMP. The shuttle option would be coupled with pedestrian lighting and sidewalk improvements along 1st Ave S. from S. Holgate Street to S. Lander Street, and along S. Lander Street between 1st Avenue S. and 4th Avenue S.</p> <ul style="list-style-type: none"> <li>• <b>At-Grade Way-Finding System.</b> In coordination with other Stadium District stakeholders, ArenaCo could be required to contribute to development of a way-finding system to guide pedestrians and cyclists to the various venues in the Stadium District. To the extent possible this system will link with and through the Pioneer Square, International District, and SoDo.</li> </ul> <p><b>Potential Mitigation Measures Applicable Only to Alternatives 2 and 3</b></p> <ul style="list-style-type: none"> <li>• <b>Pedestrian Scale Street Lighting.</b> Consider upgrading street lighting to enhance safety for pedestrians in several areas where there are preexisting low light levels. See Section 3.8 or Appendix E for potential locations.</li> <li>• <b>Bicycle Route Improvements.</b> The Arena could participate in marketing and upgrading the bike route system and prioritize bike lanes in the immediate vicinity of the site.</li> </ul>	<p>provide operating shuttles or jitneys that follow a fixed route on a fixed headway that link the Washington State Ferry terminal, Link Light Rail and Transit Stations to / from the Arena during Arena events. The intent of these jitneys and / or shuttles would be to provide an incentive for walk-on ferry passengers, transit users and persons parking in more remote offsite parking spaces. A specific shuttle plan would be developed as part of the TMP. The shuttle option would be coupled with pedestrian lighting and sidewalk improvements along 1st Ave S. from S. Holgate Street to S. Lander Street, and along S. Lander Street between 1st Avenue S. and 4th Avenue S.</p> <ul style="list-style-type: none"> <li>• The other mitigation measures included in the May 2015 remain as stated in the FEIS.</li> </ul>

**Table 1-3  
Summary of Secondary and Cumulative Impacts**

Element of the Environment	Secondary or Cumulative Impact for Pedestrians Disclosed in May 2015 FEIS	Updated or Additional Secondary or Cumulative Impacts for Pedestrians
Transportation	<p><b>Secondary Impacts for Alternatives 2 and 3</b> (no secondary impacts to pedestrians were identified in the May 2015 FEIS)</p> <p><b>Cumulative Impacts for Alternatives 2 and 3</b> (no cumulative impacts to pedestrians were identified in the May 2015 FEIS)</p>	<p>There could be secondary or cumulative impacts to non-event pedestrians in the Pioneer Square and SoDo area due to additional pedestrians walking to and from the Arena. Non-event pedestrians may find sidewalks more crowded before and immediately after events at the Arena, however impacts would be similar or less than those that exist today with events at CenturyLink or Safeco Fields.</p>

**Table 1-4  
Summary of Significant Unavoidable Adverse Impacts**

Element of the Environment	Significant Unavoidable Adverse Impact Disclosed in May 2015 FEIS	Updated or Additional Significant Unavoidable Impacts for Pedestrians
Transportation	<p>Significant unavoidable adverse impacts were found for the following sub-elements of transportation:</p> <p><b>Pedestrian Safety and Connections</b></p> <ul style="list-style-type: none"> <li>• Alternatives 2 and 3 - Increased frequency of events together with the proximity of the Arena to the S. Holgate Street rail crossings would increase the potential for conflict between pedestrians and rail, east of the site. If a pedestrian overpass were constructed, this issue would be largely eliminated. With at-grade improvements together with increased manual control of pedestrians at crossings, the potential would be reduced but not eliminated.</li> </ul>	<p><b>Pedestrian Safety and Connections</b> – No significant unavoidable adverse impacts for Alternatives 2 and 3. The increased frequency of events together with the proximity of the Arena to the S. Holgate Street rail crossings would increase the potential for conflict between pedestrians and rail, east of the site. The Proponent has agreed to fund the construction of a pedestrian overpass, and this issue would be largely eliminated. With the new pedestrian bridge, at-grade improvements together with increased manual control of pedestrians at crossings, the potential would be reduced to less than a significant unavoidable adverse impact.</p>

## Section 2 - Additional Information About Environmental Impacts and Mitigation Measures

This section repeats information contained in the May 2015 FEIS on pedestrians and provides updated information concerning pedestrian facilities surrounding the proposed Seattle Arena SoDo site.

### 2.1 Site Plan Components for Pedestrians

#### 2.1.1 Summary of Site Plan Components Identified in May 2015 FEIS

- **Pedestrian Access** – Primary pedestrian access to the site is proposed to be located on the northwest and southwest quadrants of the building. In addition, frontage modifications along S. Holgate Street, 1st Avenue S. and S. Massachusetts Street would include wider sidewalks, street furniture, street trees, rain gardens and understory planting and related building elements.
- **Public / Pedestrian Feature** – A large public plaza that includes seating, water features, pedestrian concrete, and incorporation of permeable pavements, trees and landscaping would be located on the north end of the site.

#### 2.1.2 Summary of Updated Site Plan Components for Pedestrian Facilities

The FEIS analysis was based on a pedestrian zone (contiguous unobstructed walking surface) width on the east side of 1st Avenue S. between S. Massachusetts Street and S. Holgate Street of approximately 19.5 feet (without tables and seating) during peak event flow periods. The updated analysis of pedestrian capacity assumes a pedestrian zone with a physical width of 23 feet. Both the FEIS analysis and the updated analysis include provision for “shy” distances of 1.5 feet from building edge and 2 feet from vertical landscaping (such as tree trunks) or permanently installed street furniture, effectively reducing the area in which pedestrians would walk by 3.5 feet.

The proposal has been updated based on guidance from SDOT to provide pedestrian capacity along the 1st Avenue S. frontage as follows:

- **1st Avenue S. Street Frontage** - the pedestrian zone necessary to accommodate pedestrian flows on the east side of 1st Avenue S. between S. Massachusetts Street and S. Holgate Street shall be comprised of:
  - 23 feet of contiguous unobstructed (no permanent intrusion) walking surface between the building façade and any landscaped/tree/permanent street furniture zone
  - The 23-foot unobstructed space may be located within the public right-of-way (public sidewalk), or on a combination of public sidewalk and private property

- **Events in excess of 15,000 attendees (inclusive of the proposed Arena and all stadia and exhibition halls to the north)** – the 23-foot pedestrian zone shall be kept free of all temporary obstacles (such as chairs, tables, etc.) to allow for unimpeded pedestrian flow
- **On low attendance event days (equal to or less than 15,000 attendees)** - the required unobstructed pedestrian zone shall be a minimum of 18.5 feet. Any use of public sidewalk area for outside dining (tables, chairs, railings, etc.) must be approved through a street use permit issued by SDOT and will not be allowed to encroach upon the required minimum 18.5-foot pedestrian zone.
- **On non-event days (inclusive of all stadia and exhibition halls)** - the required unobstructed pedestrian zone shall be a minimum of 10 feet

In addition to providing a widened pedestrian zone, the Proponent is working with the City to include a pedestrian bridge over the railroad tracks on S. Holgate St. As a result, no specific updating of analysis or discussion of crossing condition is included in this update.

## 2.2 Event Analysis Cases

### 2.2.1 Event Analysis Cases Used in May 2015 FEIS

This section describes the basis for determining event cases for analysis of the Stadium District alternatives and the Seattle Center area alternatives, separately, as the factors influencing the determination of the event cases varied between the two site areas. Alternatives 2 and 3 would be located on the same site in the Stadium District of SoDo, and would be influenced by events at CenturyLink Field and Event Center and Safeco Field.

These cases were determined in consideration of these factors:

- **Event Venue Major Tenant Activities** – In the Stadium District alternatives, major tenant activities included both the Proposed Project (Alternative 2) or Alternative 3, as well as the activities associated with Safeco Field and CenturyLink Field and Event Center.
- **Event Calendars** – Existing and future (with arena) event calendars were reviewed as available to assist in identifying potential seasonal overlaps between venue tenants.
- **Event Attendance Frequencies** – Using the seasonal calendars as appropriate, the frequency of event attendance levels at differing thresholds was summarized.
- **Event Analysis Cases** – Using the combination of the two summaries above, analysis cases were identified that provide a basis for understanding impacts of a single event at a new arena as well as multiple event conditions.



See Appendix E of the Final EIS for a detailed description of major tenant activities, event calendars, and existing venue frequencies.

A number of the existing venues have overlapping tenant seasons. The Mariners and Sounders FC schedules overlap from April through November. The Seahawks season starts in August, resulting in a third existing overlapping schedule. Considering the potential for playoffs, there is a generally a four-month window (August to November) where all three existing sports teams could be playing regular season or playoff games.

The current Transportation Management Plan (TMP)<sup>1</sup> developed for Safeco Field and CenturyLink Field addresses this situation and requires that when a dual event is anticipated, and the attendance is expected to exceed 58,000 people for a weekday event and 65,000 people for a weekend event, the events must be separated by a minimum of 4 hours from the completion of one to the start of another.

### **2.2.1.1 Event Assumptions for New Arena**

The following assumptions were made for events in the new Arena:

- NBA Basketball – 41 home games between November and mid-April; up to 16 home playoff games in April and May; and pre-season games in October.
- NHL Hockey – Similar to NBA with additional NHL games occurring in September.
- With a new Arena, the NBA and NHL seasons would generally run concurrently.
- WNBA Basketball – 17 home games from mid-May to late September, plus playoffs.
- Other Arena Events – There is also the potential for increased events unrelated to the professional sports teams. Based on discussion with the proponent a total of 60-65 additional events were assumed to occur, distributed throughout the year, with a slightly higher concentration during November and December.

The primary overlap in schedules with the existing Stadium District venues due to the Proposed Project (Alternative 2) or Alternative 3 would be associated with the WNBA season. This would occur between May and September for the WNBA regular season, extending to October with WNBA playoffs. During these months, the Sounders FC and the WNBA averaged four home games a month. During this same period, the Mariners in 2012 averaged 11-16 home games per month, typically played via 2 week-long home stands. The Mariners and NHL would overlap in September. The most significant potential overlap in schedules would occur in the event that the tenant of the Proposed Project (Alternative 2) or Alternative 3, professional basketball or soccer, is playing a home playoff game and overlapping with a well-attended baseball game in Safeco Field.

---

<sup>1</sup> 2012 Safeco Field TMP – Dual Event conditions

### 2.2.1.2 Frequency of Event Attendance Levels

A total of 186 events were identified as potentially occurring in the Arena. Based on typical attendance of 75 to 65 percent for NBA and NHL, respectively, the majority of the events are anticipated to have an attendance of 15,000 or less. The impacts associated with a single event occurring at the new arena would be the most common occurrence (See Table 2-1).

**Table 2-1  
Arena Event Attendance Ranges**

<b>Attendance Range (Persons)</b>	<b>Frequency</b>
0 to 500	2
501 to 2,500	0
2,501 to 5,000	10
5,001 to 10,000	52
10,001 to 15,000	88
15,001 to 18,000	12
18,001 to 20,000	22
Total No. Events	186

### 2.2.1.3 Event Case Attendance

Table 2-2 illustrates the event cases developed for transportation and parking analysis in this document for the Stadium District alternatives.

**Table 2-2  
Stadium District - Event Cases for Analysis**

Description	Attendance (Persons)		
	No Action	Action	Project Impact
Alternative 2 - 20,000 Seat Arena			
1 Case S1 – Single Event (Arena Only)			
New Arena	0	20,000	+20,000
Safeco Field	0	0	+0
CenturyLink	0	0	+0
Total Attendance	0	20,000	20,000
2 Case S2 – Dual Event (Arena + Mariners or Sounders)			
New Arena	0	20,000	+20,000
Safeco Field	40,500	40,500	+0
CenturyLink	0	0	+0
Total Attendance	40,500	60,500	20,000
3 Case S3 – Triple Event (Arena + Mariners or Sounders + CenturyLink)			
New Arena	0	20,000	+20,000
Safeco Field	47,500	47,500	+0
CenturyLink	5,000	5,000	+0
Total Attendance	52,500	72,500	20,000
Alternative 3 - 18,000 Seat Arena			
Case S1 – Single Event (Arena Only)			
New Arena	0	18,000	+18,000
Safeco Field	0	0	+0
CenturyLink	0	0	+0
Total Attendance	0	18,000	18,000
Case S2 – Dual Event (Arena + Mariners or Sounders)			
New Arena	0	18,000	+18,000
Safeco Field	40,500	40,500	+0
CenturyLink	0	0	+0
Total Attendance	40,500	58,500	18,000
Case S3 – Triple Event (Arena + Mariners or Sounders + CenturyLink)			
New Arena	0	18,000	+18,000
Safeco Field	47,500	47,500	+0
CenturyLink	5,000	5,000	+0
Total Attendance	52,500	70,500	18,000

The event cases represent the most frequent level of arena impact (Single Event), as well as an illustration of more significant potential, though comparatively rare, multiple event scenarios. Because of the complexity of the analysis, the inclusion of multiple event venues as part of baseline conditions under multiple no action comparison, the event cases have been defined (S1 – S3, reflecting Stadium District Cases 1-3) as follows:

- **Case S1 – Single Event (Arena Only)** – This designation will always describe the event case that includes the Proposed Project (Alternative 2) or Alternative 3, compared to a no action background condition that has no other event added in.
- **Case S2 – Dual Event (Arena plus Mariners or Sounders)** – A well-attended baseball or soccer game together with a capacity event in the Proposed Project (Alternative 2) or Alternative 3 would represent an infrequent, but significant dual event case to illustrate. In this case, the Mariner game would be added to the non-event baseline to provide a Case 2 No Action baseline for analysis comparison.

For purposes of this analysis, and given the proximity of Safeco Field and CenturyLink Field to the Stadium District site, the dual (and triple) event case is characterized as including a high attendance event at Safeco Field (baseball). It should be recognized that the analysis could just as easily represent a similarly sized soccer event at CenturyLink Field. The event case analysis assumes simultaneous events with uniform arrival and departure times as well as total cumulative attendance.

- **Case S3 – Triple Event (Arena + Mariners / Soccer + CenturyLink Concert)** – A triple event scenario was identified that includes activity at all three venues as described above. While even these scenarios may be addressed, limited, or prohibited as a result of a revised event scheduling agreement, the total attendance level likely from this combination was similar to that occurring in the event of a major event at CenturyLink Field, such as Monday night football. It is assumed that a triple event case that included soccer, baseball, and a major event at a new arena would not be scheduled; this would be clarified in the conditions of approval and event scheduling agreement. In this case, the Case 3 No Action baseline would include both the Mariner game and event at CenturyLink. As noted above, the analysis is constructed to reflect a total cumulative event of the attendance indicated.

## 2.2.2 Event Analysis Cases Based on Updated Environmental Information

### 2.2.2.1 Tenant Season Overlap

The overlap of tenant seasons of existing venues has been updated. The Mariners and Sounders FC regular season schedules overlap from April through October. The Seahawks season starts in August, resulting in a third existing overlapping schedule. Considering the potential for playoffs, there is a generally a three-month window (August to October) where all three existing sports teams could be playing regular season or playoff games.

### 2.2.2.2 Updated to Event Assumptions for New Arena

WNBA basketball games in the new Arena were assumed to be 17 home games from mid-May to late September.

### **2.2.2.3 Basis for Updated Analysis of Pedestrian Impacts**

The updated analysis of pedestrian impacts is structured on the same event analysis cases that were presented in the FEIS for the proposed project. It is important to understand the relative impact representative of each event case as it relates to pedestrians.

As described in the FEIS the most frequent event scenario associated with the proposed Arena would be a single event occurring in the Arena, designated Case S1, which reflects a single event occurring in the Arena. Analysis Case S2, reflecting dual events, was modeled at a combined attendance of 60,500 attendees (20,000 capacity event in the Arena, plus a 40,500 Mariner or Century Link event). Analysis Case S3 reflects the potential for three events, one at each stadia venue plus the proposed Arena, totaling 72,500 attendees.

The FEIS traffic study identified the number of event days that would occur at various attendance levels associated with the combined venues, using event calendar data for the existing stadia, and market forecasts associated with the proposed Arena. It indicated that events of up to 60,500 attendees (consistent with Case S2) would increase by about 3 events days annually. The Case S3 event would increase only once annually, due to the proposed project. Recognizing the schedules and attendance levels can vary from year to year, even if the numbers were to double the FEIS impact estimates, the increased frequency of such large multi-events would still reflect a small proportion of the total number of new event days.

The design day, case-specific, analysis of pedestrians reflects the worst-case scenario associated with rare dual and triple event cases which have schedule overlaps. Actual impacts, both before and after events are likely to be somewhat less concentrated than reflected in the analysis, which assumes the simultaneous overlay of the peak pedestrian flows for these events. For example, in the case of an S2 event with baseball, the typical start time for a baseball game is 7:10 PM, and the typical length is 3 hours, which would put the end of the game at about 10:10 PM. Typical start time for an NBA basketball game is 7:00 PM on weeknights, with an average duration of 2 hours 15 minutes, which would put the typical ending time at 9:15 PM. Thus, the typical ending times of these two event venues is separated by approximately one hour. Therefore, the assumed simultaneous overlay of the pedestrian demands leaving baseball and basketball games would be a very infrequent occurrence, especially given the limited seasonal overlap of the two schedules. NHL Hockey operates on a similar schedule to the NBA, with games typically beginning at 7:00 PM, with 2 hour 20 minute average durations. Both of these events, assuming the schedule characteristics mentioned above, would not overlap and result in simultaneous event egress.

The Case S2 and S3 condition reflected in this updated pedestrian analysis reflects a worst-case condition. For this condition to occur, there would have to be out-of-ordinary event schedules with events ending simultaneously and resulting in simultaneous pedestrian outflow from more than a single venue.

## 2.3 Pedestrian Impact Methodology

### 2.3.1 Methodology Used in May 2015 FEIS

The pedestrian impact evaluation included a broad assessment of the pedestrian environment in the study area and a more specific, quantitative evaluation of important pedestrian routes during event conditions. The broad analysis provides an understanding of the study area as a whole and the pedestrian environment along specific routes to and from major transportation stations and parking within this study area. The more specific quantitative analysis focuses on the 1st Avenue S., 4th Avenue S., and S. Holgate Street pedestrian links in close proximity to the Stadium District site where concentrations of pedestrian volumes are higher. Additional context related to the broad study area and key link evaluation method is provided below.

The broad study area was identified based on the location of parking facilities and major transportation stations that would accommodate Arena demands. The key components of the study area evaluation include:

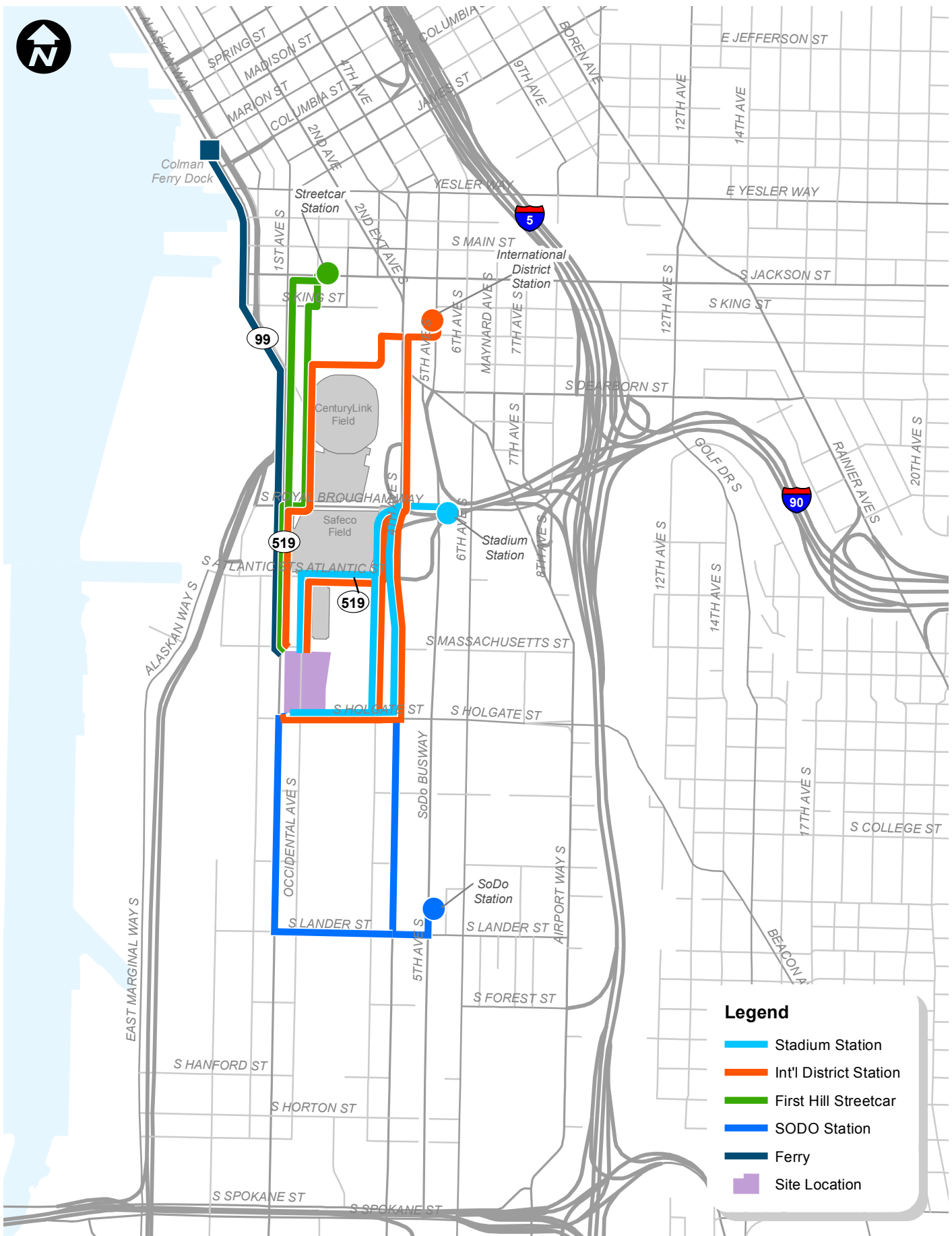
- Existing inventory of pedestrian facilities and identification of planned transportation projects that would impact the study area
- Analysis of the existing and future pedestrian event travel routes to and from major transportation stations and parking in terms of:
  - **Connectivity** or where gaps exist in the pedestrian facilities making it difficult to access the Stadium District site
  - **Quality** or the condition of the pedestrian facilities including lighting and space

Figure 2-1 illustrates the five key pedestrian routes identified for this assessment.

The pedestrian link analysis focuses on weekday post-event conditions when concentrations of pedestrian flows would be highest. Analysis is conducted for one future period representative of both 2018 and 2030 conditions due to the conservative assumptions built into the analysis as well as the fact that the level of pedestrian volumes associated with an event far outweighs non-event background volumes. Pedestrian volumes are a function of event attendance; therefore, based on the same attendance levels 2018 and 2030 volumes would be the same.

The method for the link evaluation includes:

- 1st and 4th Avenues S.: An extension of the traditional Highway Capacity Manual (HCM) methodology was used considering pedestrian flows. It was determined whether sidewalk conditions would be free flow (<10 p/ft/min), restricted (11-23 p/ft/min), or severely restricted (>23 p/ft/min). For severely restricted segments, consideration was given as to whether the conditions were temporary, alternative routes exist, and / or mitigation may be needed to improve conditions.



Stadium District Key Pedestrian Routes

Seattle Arena

FIGURE 2-1

- S. Holgate Street: The effect of potential railroad activity blocking east-west travel for pedestrians and an evaluation of pedestrian storage needs.

See Appendix E of the Final EIS for the basis of estimations of pedestrian volumes and the approach used for each key corridor.

### **2.3.2 Methodology Used Based on Updated Environmental Information**

The methodology used for the updated environmental impact assessments is the same as used for the May 2015 FEIS.

## **2.4 Affected Environment**

### **2.4.1 Affected Environment for Pedestrians Described in May 2015 FEIS**

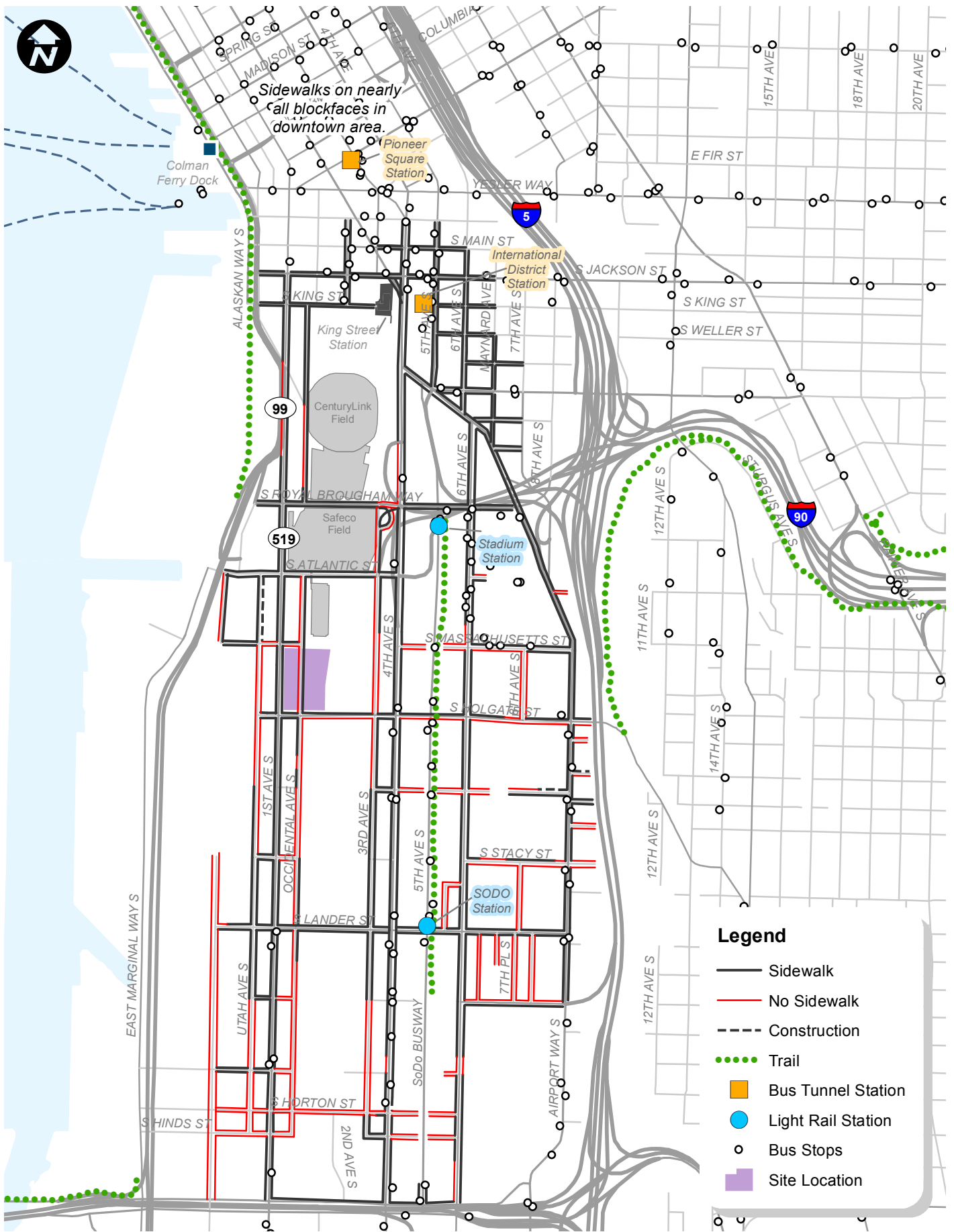
The inventory of pedestrian facilities included identification of raised sidewalks, trails, and segments that were missing any kind of facility. Figure 2-2 summarizes the study area pedestrian network and identifies the existing trails and gaps in sidewalk network.

When reviewing the inventory, there is generally a difference in the density of the sidewalk connections north of S. Holgate Street as compared to the area south of S. Holgate Street. This is likely due to the level and nature of the development that has occurred north of S. Holgate Street and its proximity to the CBD.

Most of the major north-south and east-west arterials have sidewalks on one or both sides of the streets. Impediments were identified throughout the area that included fire hydrants, signage, or power poles. These impediments reduce the useable width of the sidewalk for short distances. Sidewalks are more intermittent along minor streets such as Occidental Avenue S., Utah Avenue S., and 3rd Avenue S., south of S. Royal Brougham Way.

Weekday pedestrian flows in the study area without an event are generally to and from transit and employment centers or business employees walking to food establishments or parking. Employment centers in the study area include the King County offices located at 201 S. Jackson Street immediately north of CenturyLink Field and offices in the area of Union Station between 4th Avenue S. and 5th Avenue S. Transit facilities in the northern area that have a large pedestrian draw include King Street Station and the International District / Chinatown Station. Pedestrian activity near the Seattle Arena site and in the southern portion of the study area is generally low given the primarily industrial land uses. This low pedestrian activity also occurs along Occidental Avenue S. between S. Massachusetts and S. Holgate Streets where there are no sidewalks and the uses are industrial. Higher pedestrian activity in the southern portion of the study area occurs along corridors accessing transit (e.g., near the SoDo Busway and Link Light Rail stations) and larger employers (e.g., near the Starbucks Headquarters at 1st Avenue S. and S. Lander Street).





# Stadium District Pedestrian Facilities

Seattle Arena

FIGURE 2-2

The pedestrian travel patterns in the study area change with an event conditions as the main draw becomes either CenturyLink Field or Safeco Field, with flows generally coming to and from event parking areas and transit facilities. Pedestrian volumes in the immediate vicinity of the event venues increase, particularly along 1st Avenue S., S. Jackson Street, S. Royal Brougham Way, and at the signalized pedestrian crossing of 4th Avenue S. between the Union Station Parking Garage and CenturyLink Field. 1st Avenue S. serves as a main north-south pedestrian corridor with several large parking garages in the north and parking lots and on-street parking to the south of CenturyLink Field. The pedestrian volumes along S. Jackson Street, S. Royal Brougham Way and at the 4th Avenue S. signalized crossing are generally related to transit or parking in the International District.

Based on the pedestrian travel patterns described above and the major transportation and parking, four specific routes were identified for further review and are described in the May 2015 FEIS for four major pedestrian routes

- **Stadium Station Route** - These routes are approximately 1/2-mile long and provide access to the closest transit facility (Stadium Station) to the site.
- **SoDo (Lander) Station Route** - The two routes providing access between the site and the SoDo station are both less than one mile long with facilities varying between sidewalks and little to no shoulder.
- **International District Station Route** - The routes providing access between the site and the International District are both almost one mile.
- **Ferry (Colman Dock) Route** - This route is over one mile long.

### Link Evaluation

Non-event and post-event pedestrian counts were conducted in May 2013 along the key segments in the vicinity of the site. The post-event conditions represent pedestrian volumes for an attendance level of approximately 13,000. Tables 2-3 and 2-4 in Appendix E provide the link analysis.

**1st and 4th Avenues S.:** Based on the existing post-event pedestrian volumes along the 1st and 4th Avenues S. study segments flow rates are an acceptable two p/ft/min or less even with the Mariners game. This analysis indicates that the sidewalks on the east and west sides of both 1st and 4th Avenues S. are adequate to accommodate the existing pedestrian demand.

**S. Holgate Street:** Pedestrians routinely get stopped during the traverse of the span of tracks along S. Holgate Street when a train ahead causes a gate drop and in some cases, a train behind. Event pedestrian demands are particularly prone to this as the groups of pedestrians occurring after an event have limited refuge when they are stopped by a closing crossing gate. This dynamic results in a potential for conflict between pedestrians and train crossings.

The sensitivity analysis for existing non-event and post-event pedestrian demands shows:

- Pedestrian queues range from approximately 10 to 125 pedestrians, depending on the duration of the blockage.
- Length of sidewalk storage to accommodate queues based on current blockage levels of around 10 minutes range from 20 feet without an event to 40 feet with a Mariners game of approximately 13,000 attendees.
- Blockages up to 45 minutes (representing increased activity) would result in the need for approximately 140 feet of storage to accommodate existing pedestrian demands, which can be accommodated within the existing sidewalk area along S. Holgate Street on the north side.

#### **2.4.2 Affected Environment for Pedestrians Based on Updated Environmental Information**

The affected environment for pedestrians is the same as identified in the May 2015 FEIS.

## **2.5 Impacts**

### **2.5.1 Pedestrian Forecasts**

#### **2.5.1.1 Pedestrian Forecasts Used for Analysis in May 2015 FEIS**

The FEIS No Action Case S2 and S3 pedestrian volumes were forecast by proportionally increasing the existing post-event pedestrian volumes to reflect attendance levels consistent with the event case demands. The existing post-event pedestrian volumes were factored up to design day conditions based on a Mariners game with an attendance of approximately 13,000.

#### **2.5.1.2 Pedestrian Forecasts Based on Updated Environmental Information**

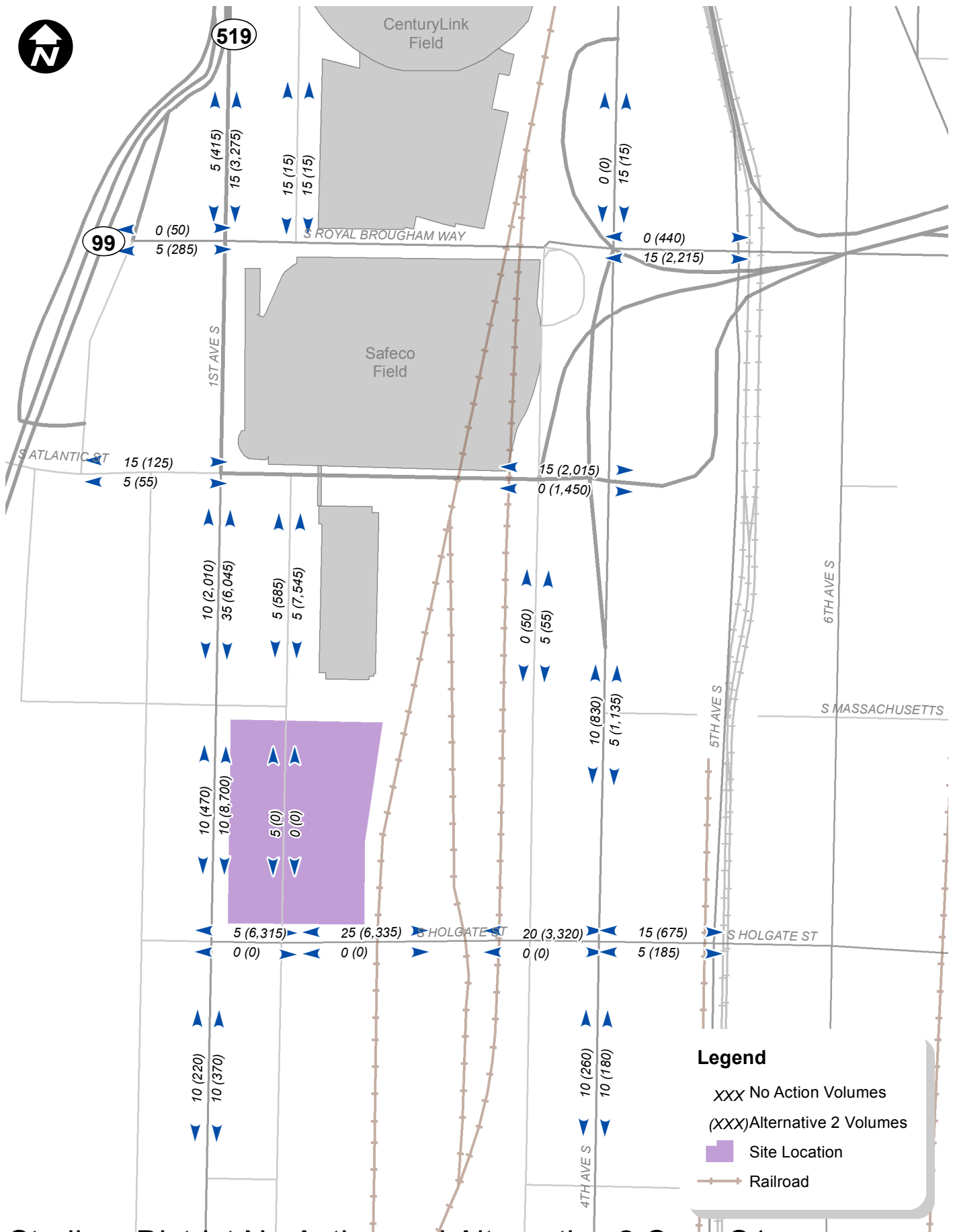
The No Action Case S2 and S3 pedestrian forecasts were updated to reflect the higher pedestrian demands. The methodology reflected in this analysis includes:

- Pedestrian volume from June 2015 Occidental Avenue S. pedestrian count (i.e., 2,800 pedestrian per hour, source: Heffron Transportation, Inc. 2015 – *Technical Memorandum – New Seattle Arena*) was proportioned to reflect the Case S2 and S3 attendance levels.
- Pedestrian volume on the remaining study segments were estimated by applying the factor identified in the updated Occidental Avenue S. pedestrian volumes to all applicable sidewalk sections
- Consistent with the FEIS, Alternative 2 Cases S2 and S3 forecasts were determined by adding Arena pedestrian demands associated with travel demand / mode split estimates to the No Action Case S2 and S3 forecasts.

- For Alternative 2, the Occidental Avenue S. pedestrian demands between S. Massachusetts and S. Holgate Streets were shifted to 1st Avenue S. between S. Massachusetts and S. Holgate Streets as a result of the project and associated street vacation. It was assumed that 75 percent of the pedestrians would utilize the east sidewalk and the remaining 25 percent the west sidewalk.
- For analysis purposes, all hourly pedestrian volumes were broken down to the highest 15-minute increment, consistent with the prescribed methodology. The updated count data had a peaking factor of 65 percent that was applied to the analysis; the FEIS count data was lower.

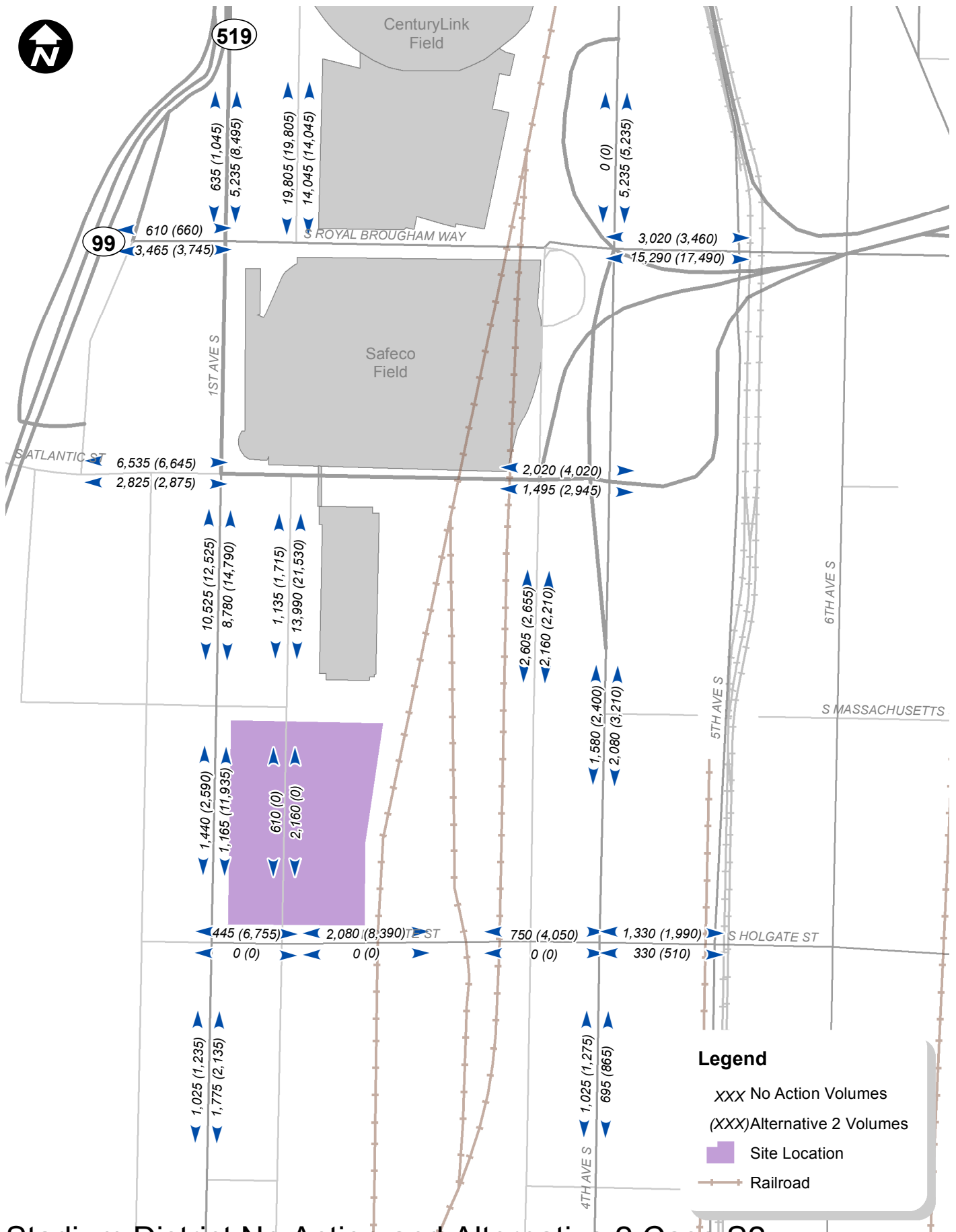
Figures 2-3, 2-4 and 2-5 reflect updated pedestrian forecasts associated with the updated 2015 counts from the 2015 Heffron memorandum. Each figure shows the respective No Action pedestrian forecasts appropriate for each analysis case. They reflect forecasts tailored to the Case S2 and S3 analysis condition, using the higher pedestrian count base provided by the June 2015 data.

Table 2-3 provides a summary of the comparison of the updated hourly pedestrian volumes forecast for the post-event analysis cases, and compares them to those in the FEIS, at the study area sidewalk segments.



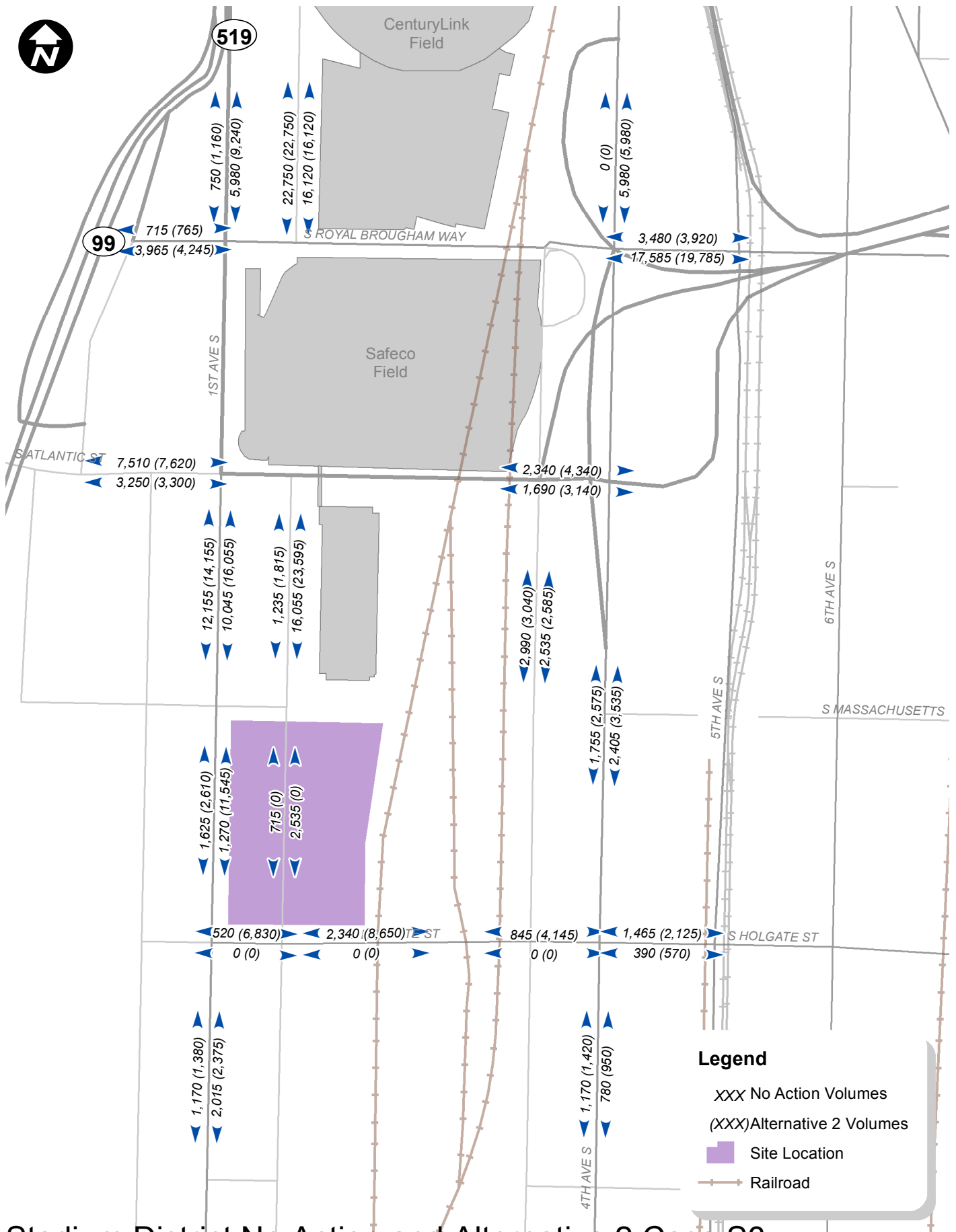
Stadium District No Action and Alternative 2 Case S1  
Post-Event Pedestrian Volumes

FIGURE  
2-3



Stadium District No Action and Alternative 2 Case S2  
Post-Event Pedestrian Volumes

FIGURE  
2-4



Stadium District No Action and Alternative 2 Case S3  
Post-Event Pedestrian Volumes

FIGURE  
2-5

**Table 2-3  
Comparison of Post-Event Hourly Pedestrian Volumes**

	Case S1			Case S2				Case S3			
	No Action	Alt 2		No Action		Alt 2		No Action		Alt 2	
		Original	Revised	Original	Revised	Original	Revised	Original	Revised	Original	Revised
<b>1st Ave - West Side</b>											
Atlantic to Massachusetts	10	2,010	2,010	1,540	10,525	3,540	12,525	2,000	12,155	4,000	14,155
Massachusetts to Holgate	10	470	470	210	1,440	670	2,590	270	1,625	730	2,610
Holgate to Walker	10	220	220	150	1,025	360	1,235	190	1,170	400	1,380
<b>1st Ave - East Side</b>											
Atlantic to Massachusetts	35	6,045	6,045	1,285	8,780	7,295	14,790	1,655	10,045	7,665	16,055
Massachusetts to Holgate	10	8,700	8,700	170	1,165	8,860	11,935	210	1,270	8,900	11,545
Holgate to Walker	10	370	370	260	1,775	620	2,135	330	2,015	690	2,375
<b>4th Ave - West Side</b>											
Atlantic to Holgate	10	840	830	230	1,580	1,060	2,400	290	1,755	1,120	2,575
Holgate to Walker	10	260	260	150	1,025	400	1,275	190	1,170	440	1,420
<b>4th Ave - East Side</b>											
Atlantic to Holgate	5	1,125	1,135	305	2,080	1,425	3,210	395	2,405	1,515	3,535
Holgate to Walker	10	180	180	100	695	270	865	130	780	300	950



## **2.5.2 Operation Impacts of the No Action Alternative at Alternative 2 and 3 Site**

### **2.5.2.1 Impacts of No Action Alternative Identified in May 2015 FEIS**

**1st and 4th Avenues S.:** Based on the No Action post-event pedestrian volumes along the 1st Avenue S. study segments flow rates are acceptable with rates less than 10 p/ft/min. This analysis indicates that the sidewalks on the east and west sides of 1st and 4th Avenues S. are adequate to accommodate the No Action pedestrian demand under all event cases.

**S. Holgate Street:** During train crossings, pedestrian queues range from 5 to 450 pedestrians, depending on the duration of the blockage. Blockages up to 45 minutes (representing increased activity) would result in the need for approximately 505 feet of storage to accommodate the Case S3 representing 52,500 attendees. This pedestrian queue would be greater than could be accommodated between the railroad tracks and 1st Avenue S. along S. Holgate Street; therefore, pedestrians would likely stand closer together and/or extend back along the sidewalk along 1st Avenue S. As noted in the Affected Environment, the pedestrian environment along S. Holgate Street, with related lack of storage, and proliferation of rail crossings, creates an environment with opportunity for conflicts between pedestrians and rail activity. With increases in pedestrians associated with the No Action and planned increases in train activity, these issues would likely increase in the future along S. Holgate Street.

### **2.5.2.2 Impacts of No Action Alternative Based on Updated Environmental Information**

Impacts of the No Action Alternative are generally discussed in the context of the updated analysis Alternative 2. The updated pedestrian forecasts only impacted a background condition associated with a multiple event scenario (Cases S2 and S3), resulting in higher No Action pedestrian congestion levels, as well as higher levels associated with the with-project condition for those event cases.

## **2.5.3 Impacts of the Proposed Project (Alternative 2) – Stadium District 20,000-Seat Arena**

### **2.5.3.1 Impacts of Alternative 2 – Stadium District 20,000-Seat Arena – Identified in May 2015 FEIS**

Alternative 2 construction would result in intermittent sidewalk closures along the frontage of the site (i.e., 1st Avenue S. and S. Massachusetts and Holgate Streets). A construction management plan would be developed and alternate pedestrian circulation would be provided adjacent to the construction site through the use of temporary walkways, detours and signs.

The following describes the Alternative 2 pedestrian context in terms of the broad study area and proximate links.

## **Broad Study Area Evaluation**

Alternative 2 is not anticipated to change the wider study area or the pedestrian environment along the key travel routes to and from the Stadium District site described in the Affected Environment and No Action.

This alternative would result in the vacation of Occidental Avenue S. between S. Massachusetts Street and S. Holgate Street; therefore, travel patterns for pedestrians using this connection would change. Pedestrian activity occurring along this portion of Occidental Avenue S. is generally minimal during non-event conditions. As event attendance increases, use by pedestrians walking to and from parking located to the south increases. In addition, there are no sidewalk facilities along this segment of Occidental Avenue S., and the environment is poor given the undefined pedestrian area and the level of business activity occurring. Pedestrians currently using Occidental Avenue S. would likely shift to 1st Avenue S., which has an improved pedestrian environment with a connected sidewalk system. The 1st Avenue S. sidewalk frontage between S. Massachusetts and S. Holgate Streets is proposed at 15 feet, which is adequate to accommodate expected levels of pedestrians for Alternative 2.

## **Link Evaluation**

The evaluation considers frontage improvements along 1st Avenue S. and S. Holgate Street with Alternative 2. Alternative 2 Case S1 pedestrian flows would be restricted and pedestrians would experience crowded conditions assuming the identified peaking characteristics. The multi-event cases (Case S2 and S3) would cause further restricted flows on the east side as well as degrade conditions on the west side of 1st Avenue S. between S. Atlantic and S. Massachusetts Streets.

**1st and 4th Avenues S.:** Alternative 2 results in a large increase in the pedestrian flow rate along all segments given the proximity of the site to these roadways:

- Alternative 2 Case S1 pedestrian flows on the east side of 1st Avenue S. between S. Atlantic and S. Massachusetts Streets would be severely restricted and pedestrians would experience crowded conditions, assuming the identified peaking characteristics.
- The multi-event cases (Case S2 and S3) would cause further restricted flows on the east side as well as degrade conditions on the west side of 1st Avenue S. between S. Atlantic and S. Massachusetts Streets.
- Given the location of the doors to the Arena along 1st Avenue S. at the northwest (at 1st Avenue S./S. Massachusetts Street) and southwest (1st Avenue S./S. Holgate Street) corners of the building and the approximately 24-foot wide sidewalk (16-foot pedestrian zone) proposed along the frontage, flows along 1st Avenue S. between S. Massachusetts and S. Holgate Streets would be slightly restricted.
- Pedestrian flows along 4th Avenue S. between S. Atlantic and S. Walker Streets would generally experience free flow except on the west side of 4th Avenue S. between S.

Atlantic and S. Holgate Streets where the addition of the Arena would result in some crowding due to a constrained sidewalk section. There is capacity on the east side, so pedestrians wanting to avoid crowds could use these facilities. It is noted that along 4th Avenue S. the sidewalk conditions (including width and lack of maintenance) and poor lighting make this route less accessible for pedestrians.

The calculation of pedestrian flow rates suggests that during the peak 15 minutes associated with a capacity event egress sidewalk on the east side of 1st Avenue S. north of Massachusetts Street would be crowded as a result of the Arena. This could be mitigated by rerouting more pedestrians to Occidental Avenue S. immediately north of the site, and / or providing more onsite attractions and amenities to reduce peaking characteristics of post-event egress.

**S. Holgate Street:** The evaluation assumed that the sidewalk along the S. Holgate Street Arena frontage would be widened to 24-foot and that given the crowding during post event conditions up to 8 pedestrians would walk side-by-side. By comparison, the No Action assumes up to 2 pedestrians would walk side-by-side. Alternative 2 would result in substantially more pedestrians along S. Holgate Street than characterized for the No Action conditions during both event ingress and egress. It is likely that conflicts between pedestrians and trains would increase with Alternative 2 exacerbating an issue that exists under current event and non-event conditions. The introduction of an Arena at this location would substantially increase and concentrate demands over currently observed levels.

As illustrated by the sensitivity analysis for Alternative 2 pedestrian demands:

- Pedestrian queues and storage needs would range from approximately 15 to 330 times greater than characterized for the No Action conditions.
- Pedestrian queues attributable to waiting for passing trains would range from approximately 900 to 8,000 pedestrians, depending on the duration of the blockage.
- Sidewalk storage to accommodate queues based on current blockage levels of around 10 minutes would be over 500 feet.
- Blockages up to 45 minutes (representing increased activity) would result in the need for approximately 2,120 square-feet of storage to accommodate just an Arena event. This would mean that pedestrian queues would extend to 1st Avenue S.

As noted in the Affected Environment, there is an existing pedestrian access issue along S. Holgate Street related to the lack of storage. With significant increases in event-related pedestrian volumes associated with Alternative 2 and planned increases in train activity, pedestrian access issues would increase in the future along S. Holgate Street. Accommodating the large storage needs for pedestrians, particularly during post-event egress, would be difficult even with enhanced at-grade crossings and pedestrian treatments.

### **2.5.3.2 Impacts of Alternative 2 Based on Updated Environmental Information**

The following provides an updated pedestrian analysis reflective of additional pedestrian data collected for a Mariners game on June 19, 2015 with an attendance of 40,956 (approximately 41,000) persons. The updated pedestrian data is documented in the 2015 Heffron memorandum. The June 2015 Mariners data shows that the forecasted pedestrian volumes along sidewalks south of Safeco Field are likely to be higher than presented in the Seattle Arena FEIS. The new analysis contained in this Addendum focuses primarily on an updated capacity analysis. The findings and recommendations previously noted for the link evaluation regarding lighting and wayfinding remain the same as described in the FEIS.

The FEIS considered the dual event cases S2 (Arena plus either a Mariners or Sounders game to have a 40,500 person attendance at Safeco Field) and the triple event case S3 (Arena plus Mariners or Sounders plus small event at CenturyLink Field) to have a 47,500 person attendance at Safeco plus 5,000 person attendance at CenturyLink. During the study for the FEIS, pedestrian counts were conducted and factored up to a design day attendance level condition. However, for the higher attendance game recently counted, a higher concentration of parking was located to the south than captured in the data from the FEIS. As a result, pedestrian volumes on the sidewalk sections in the FEIS under-estimated the pedestrian levels expected for events of the sizes identified for analysis Cases S2 and S3.

The 2015 Heffron memorandum draws conclusions that the increased pedestrian congestion (represented as pedestrian levels of service in the Severely Restricted range) represented by these higher peak pedestrian flows would create an unsafe pedestrian condition adjacent to the proposed Arena. This would suggest that pedestrian flows would exceed the sidewalk width and result in pedestrians walking in the street. The analysis described below updates the pedestrian forecasts and related analysis for the sidewalk and pedestrian zone in front of the Arena on 1st Avenue S., and along all of the sidewalk sections disclosed in the FEIS. While the analysis identifies sections of sidewalks that would be severely restricted immediately following the ending of one or more events, it does not reach a conclusion that impacts of the Arena would result in an unsafe condition for pedestrians.

The updated description of impacts below is based on Alternative 2, which reflects the larger (20,000 seat capacity) of the two SoDo Alternatives. It is recognized that Alternative 3 would result in similar, though marginally lower impacts based on smaller attendance, as described in the FEIS.

Table 2-4 shows the 1st and 4th Avenues S. Alternative 2 pedestrian flow analysis as compared to the No Action conditions for each event case. Pedestrian flow rates are measured relative to the capacity to provide a “level of crowding”. Sidewalk conditions are characterized as free flow (<10 p/ft/min), restricted (11-23 p/ft/min), or severely restricted (>23 p/ft/min). The City of Seattle does not have an adopted standard.

**Table 2-4  
Pedestrian Flow Assessment – Comparison of No Action and Alternative 2  
(Simultaneous Post Event Case)**

Sidewalk or Pedestrian Zone Section		Case S1		Case S2		Case S3	
		Pedestrian Flow Rate <sup>1</sup> (p/ft/min) / Level of Crowding <sup>2</sup>		Pedestrian Flow Rate <sup>1</sup> (p/ft/min) / Level of Crowding <sup>2</sup>		Pedestrian Flow Rate <sup>1</sup> (p/ft/min) / Level of Crowding <sup>2</sup>	
		No Action <sup>3</sup>	Alt 2 <sup>4</sup>	No Action	Alt 2 <sup>4</sup>	No Action	Alt 2 <sup>4</sup>
1st Avenue S.	S. Atlantic St to S. Massachusetts St West Side (width <sup>5</sup> = 8.5-feet)	<1 / Free Flow	10 / Free Flow	54 / Severely Restricted	64 / Severely Restricted	62 / Severely Restricted	72 / Severely Restricted
	East Side (width <sup>5</sup> = 5.5-feet)	<1 / Free Flow	47 / Severely Restricted	69 / Severely Restricted	117 / Severely Restricted	79 / Severely Restricted	126 / Severely Restricted
	S. Massachusetts St. to S. Holgate St West Side (width <sup>5</sup> = 7-feet)	<1 / Free Flow	3 / Free Flow	9 / Free Flow	16 / Restricted	10 / Free Flow	18 / Restricted
	East Side (width <sup>5</sup> = 7-feet [No Action Sidewalk] width <sup>5</sup> = 19.5-feet [Alt 2 Pedestrian Zone])	<1 / Free Flow	19 / Restricted	7 / Free Flow	27 / Severely Restricted	8 / Free Flow	28 / Severely Restricted
	S. Holgate St to S. Walker St West Side (width <sup>5</sup> = 9-feet)	<1 / Free Flow	1 / Free Flow	5 / Free Flow	6 / Free Flow	6 / Free Flow	7 / Free Flow
	East Side (width <sup>5</sup> = 6-feet)	<1 / Free Flow	3 / Free Flow	13 / Restricted	15 / Restricted	15 / Restricted	17 / Restricted
4th Avenue S.	S. Atlantic St to S. Holgate St West Side (width <sup>5</sup> = 3.5-feet)	<1 / Free Flow	17 / Restricted	20 / Restricted	36 / Severely Restricted	22 / Restricted	38 / Severely Restricted
	East Side (width <sup>5</sup> = 3.5-feet)	<1 / Free Flow	7 / Free Flow	26 / Severely Restricted	33 / Severely Restricted	30 / Severely Restricted	37 / Severely Restricted
	S. Holgate St to S. Walker St West Side (width <sup>5</sup> = 1-feet)	<1 / Free Flow	8 / Free Flow	45 / Severely Restricted	51 / Severely Restricted	51 / Severely Restricted	57 / Severely Restricted
	East Side (width <sup>5</sup> = 3.5-feet)	<1 / Free Flow	3 / Free Flow	9 / Free Flow	12 / Restricted	10 / Free Flow	13 / Restricted

1. Pedestrian flow calculation based on the 2010 *Highway Capacity Manual* (HCM) method using the peak 15-minute pedestrian demand rounded to the nearest 20 pedestrians to determine peak hourly flows. The calculated flow reflects the most constrained portion of the evaluated sidewalk section and is expressed in pedestrian per feet per minute (p/ft/min)
2. Based on HCM, free flow is <10 p/ft/min, restricted is 11-23 p/ft/min, and severely restricted is >23 p/ft/min.
3. No Action Case S1 pedestrian flow is consistent with existing non-event conditions since the pedestrian demand in the study area is low during the post-event time period when there is no event at the existing venues.

4. Assessment assumes pedestrian improvements along site frontage including 1st Avenue S. between S. Massachusetts Street and S. Holgate Street where a 23-foot pedestrian zone (19.5-foot effective width) is assumed on the east side of the street per direction given by City of Seattle SDOT and DPD staff.
5. The analysis assumes the smallest effective walkway width measured along the segment; therefore, widths may be greater in some areas. An effective walkway width of 19.5-feet is assumed along the 1st Avenue S. Arena frontage.

As indicated, the number of sidewalk sections now forecast to exhibit severely restricted flow conditions during the post event peak 15 minutes associated with the identified (worst case) analysis cases has increased from one to six. This increase is a product of both the updated pedestrian forecasts and the application of the higher 15-minute peaking factor inherent in the data.

The FEIS identified severely restricted flow within the following sidewalk sections:

- **1st Avenue S. between S. Massachusetts Street and S. Atlantic Street (East Side)**

With the revised pedestrian forecasts, severely restricted flow rates are forecast within the following sidewalk segments and analysis cases:

- **1st Avenue S. between S. Holgate Street and S. Massachusetts Street (East Side)**— Cases S2 and S3 would create a calculated drop in pedestrian performance from free flow to severely restricted due to simultaneously exiting events at the Arena and one or more of the other stadia or exhibition halls to the north. Given seasonal schedules for the primary tenants, together with the typical start and ending times of events, this condition would not typically occur.
- **1st Avenue S. between S. Massachusetts Street and S. Atlantic Street (East Side).** – Case S1: with Arena Only; Case S2: No Action (with Mariners) and with-project; Case S3: No Action and with-project. As shown the level of pedestrian congestion associated with a Case S1 Arena-only event would be less than the No Action condition associated with a Mariner game of 40,500 persons. Occidental Avenue S. between S. Massachusetts Street and S. Atlantic Street provides a parallel route option. It is noted, however, that, less than a full block away from a major sports venue, severely restricted pedestrian conditions resulting in substantially slowed progress is not an unusual, or necessarily a hazardous condition.
- **1st Avenue S. between S. Massachusetts Street and S. Atlantic Street (West Side).** Case S2 and S3 result in severely restricted flow ratings under either No Action or with project conditions. Although the sidewalks in this segment are generally 15-17 feet wide, the effective width is limited by occasional planters and abutting buildings along portions of the sidewalk segment. As in the east side of the street, the No Action condition associated with an event at Safeco in Case S2 results in a worse pedestrian flow than that associated with a capacity event at the proposed Arena, Case S1.

- **4th Avenue S. between S. Atlantic Street and S. Holgate Street (West Side).** Similar to the section of 1st Avenue S. between S. Holgate Street and S. Massachusetts Street, Cases S2 and S3 would create a calculated drop in pedestrian performance from restricted to severely restricted due to simultaneously exiting events at the Arena and Safeco. Given typical schedules, this condition is not expected to occur, both from the perspective of seasonal overlap as well as the hours that events in each venue would start and stop. The with-project impact of an event at the arena only (S1) would result in less pedestrian congestion than that associated with the No Action condition of either Case S2 or S3. The capacity-limiting factors in this sidewalk section are typically light poles located in the sidewalk on 90-150-foot spacing.
- **4th Avenue S. between S. Atlantic Street and S. Holgate Street (East Side).** Severely restricted pedestrian conditions are calculated for this sidewalk segment under both No Action and with-project condition's for Cases S2 and S3. In both cases, the No Action condition associated with multiple events at CenturyLink and Safeco Fields would exceed the congestion level identified in relation to the with-project condition for Case S1. This sidewalk section is characterized by widths ranging from over 20 feet on the north, to as little as 5 feet, where, near Holgate Street, buildings, fences, and or landscaping contribute to a narrower effective width affecting capacity calculations.
- **4th Avenue S. between S. Walker Street and S. Holgate Street (West Side).** Severely restricted pedestrian conditions are calculated for this sidewalk segment under both No Action and with-project condition's for Cases S2 and S3. In both cases, the No Action condition associated with multiple events at CenturyLink and Safeco Fields would exceed the congestion level identified in relation to the with-project condition for Case S1. This sidewalk section has widths ranging from 4 to 10 feet, but the effective width is impacted by occasional light poles and adjacent fences, which reduce the effective width to as little as 1 to 2 feet at these limited locations.

**Holgate Street Railroad Crossing Considerations.** The FEIS acknowledged that at-grade crossings of the railroad tracks along Holgate Street, especially considering the level of increasing rail activity planned in the future, was undesirable and capacity constrained when post-event egress coincided with a major train event. While manual control and physical barriers would inhibit undesired pedestrian crossing, it was acknowledged to be a significant adverse impact in the FEIS. To mitigate the impact and reduce the impacts to less than significant, the FEIS identified the need for the Proponent to either develop a pedestrian bridge from the Arena along S. Holgate Street to the east, or implement shuttles or jitneys that would operate during Arena events to connect the Arena with Link Light Rail, transit stations and the Colman Ferry terminal. The Proponent has since agreed to fund the construction of a pedestrian bridge.

The pedestrian demands associated with the Case S2 and S3 conditions would be greater than those identified in the FEIS. With the implementation of the proposed mitigation, impacts would remain below a level of significantly unavoidable adverse impacts.

## **2.5.4 Operation Impacts of Alternative 3 – Stadium District 18,000-Seat Arena**

### **2.5.4.1 Impacts of Alternative 3 – Stadium District 18,000-Seat Arena – Identified in May 2015 FEIS**

With 10 percent less seats, this would result in a 10 percent reduction in the overall pedestrian demand as compared to the Alternative 2. Overall transportation impacts for Alternative 3 would be slightly less than those described for Alternative 2 and the analysis of Alternative 2 fully encompasses any transportation impacts that would occur as a result of developing Alternative 3.

### **2.5.4.2 Impacts of Alternative 3 Based on Updated Environmental Information**

Impacts associated with Alternative 3 would be similar to those described for Alternative 2 above for all event cases. The direct pedestrian impact of Alternative 3 would be approximately 10 percent less than that of Alternative 2, as a simple ratio of the reduced capacity of an Arena under Alternative 3 compared to Alternative 2. Cumulatively, the pedestrian impacts of Alternative 3 with the impacts of other stadia in the area would be similar to those of Alternative 2. No change in substantive analysis or conclusions would occur as a result of Alternative 3 compared to those described for Alternative 2.

## **2.6 Occidental Avenue South Street Vacation (as it relates to Pedestrians)**

### **2.6.1 Occidental Avenue South Street Vacation Impacts Described in May 2015 FEIS**

An element of the Alternative 2 and Alternative 3 proposals includes the vacation of Occidental Avenue S. between S. Holgate Street and S. Massachusetts Street. The cumulative conditions with an arena event, inclusive of the street vacation, were accounted for in the analysis of Alternatives 2 and 3. This section provides a focused comparison of conditions intended to isolate the impacts of the vacation itself. It includes a comparison to developing the site under the current zoning; assuming no vacation of Occidental Avenue S. This additional development scenario is not considered an alternative for purposes of the EIS evaluations but has been included for purposes of assessing the impacts of the Occidental Avenue S. street vacation. This section evaluates the proposed street vacation, independently, and in the context of the development proposal.



### 2.6.1.1 Context

Occidental Avenue S. is classified as an access street. It serves a variety of purposes, ranging from local access for adjacent business and events, staging for events at Safeco Field and CenturyLink Field, event parking, to a potential route bypass to 1st Avenue S. during periods of higher traffic congestion.

### 2.6.1.2 Local Circulation Issues

The Mariners emphasized the importance of maintaining accessibility to the Safeco Field parking garage and surface parking lot, as well as the service road and fire lane, and noted the use of the plaza area between the parking structure and Occidental Avenue S. for bus staging.

- **Safeco Field Parking Garage – Access and Usage.** The parking garage is used daily by staff and vendors at the facility, with approximately 250 parking spaces identified for these uses. Another 50 spaces are leased to adjacent office properties, except during game days. Access to the garage is provided directly from S. Atlantic Street on the north, as well as on the south and east faces of the garage, which access the street system via S. Massachusetts Street and / or Occidental Avenue S.
- **Service Road / Surface Parking Lot.** This drive, which extends east via an extension of S. Massachusetts Street, provides direct southerly access to the parking garage. In addition, it connects service activity (trucks, food delivery, etc.) for Safeco Field with the local street system, connecting under S. Atlantic Street to Safeco Field itself from east of the parking garage. This connection also serves as the fire lane for Safeco Field.
- **Plaza and Adjacent Right-of-Way.** This section of the sidewalk and right-of-way is open space for pedestrians during most periods; during events at Safeco Field, as well as some CenturyLink Field events, it is used for charter bus staging and pick-up / drop-off, ADA assisted parking.

### 2.6.1.3 Methodology

The evaluation of the street vacation on the local transportation network was conducted consistent with the methodology previously discussed in the document. Consistent with the scope of this EIS, the impacts of the proposed street vacation were evaluated for the following transportation elements:

- Trip Generation
- Public Transportation
- Pedestrians
- Bicycle
- Traffic Volumes

Traffic Operations (Intersection Operations, Local Circulation and Traffic Diversion)

- Freight and Goods
- Parking
- Safety

The future 2030 conditions were evaluated for two scenarios. First, the impact of the physical change in street connectivity is evaluated, independent of the proposed development or build-out under the current zoning. Second, the comparative impact of the two site development scenarios is summarized.

1. **Street Vacation Impact:** This scenario provides the most direct basis for understanding the singular effects of the vacation itself, assuming no changes in land use or development. The No Action 2030 conditions without and with a street vacation are compared.
2. **Comparison of Site Development Options:** This scenario compares the results of the analysis conducted for Alternative 2 Case S1, with the vacation of Occidental Avenue S., to the development of an approximately 810,000 sf commercial project on the project site, without the Occidental Avenue S. vacation, assuming build-out under current zoning.

#### 2.6.1.4 Impacts of the Vacation

Table 2-5 provides a summary of the key transportation elements (*for pedestrians only – see Final EIS for complete analysis*) associated comparing the current proposal to future development that would be enabled assuming no Occidental Avenue S. street vacation.

**Table 2-5  
Occidental Avenue S. Street Vacation Comparative Analysis**

	<b>Street Vacation Impact</b>	<b>Comparison of Site Development Options</b>
Pedestrians	With the street vacation, pedestrians would divert from Occidental Avenue S. to either 1st Avenue S. or 4th Avenue S. depending on the origin or destination of the trip Pedestrian volumes were observed to be low along Occidental Avenue S., north of S. Holgate with and without an event.	The Arena would result in concentrated, though comparatively infrequent, pedestrian demands during event ingress / egress; pedestrian demands associated with the development under current zoning would result in lower, more evenly distributed pedestrian demands occurring throughout the day, and especially during lunch breaks.  In either case, additional pedestrian demands would contribute to increased use of local sidewalks, including S. Holgate Street. Impacts of Arena related pedestrian peak demands are documented in the Pedestrian section; the impacts of the development under current zoning would be less, but also contribute to existing issues with pedestrian accessibility crossing the

	Street Vacation Impact	Comparison of Site Development Options
		railroad tracks to the east. Office pedestrians could orient eastward to connect to bus and / or Link Light Rail service for commuting.

## 2.6.2 Occidental Avenue South Street Vacation Impacts Based on Updated Environmental Information

Table 2-6 summarizes the updated Occidental Avenue S. street vacation analysis based on the updated analysis contained in this Addendum.

**Table 2-6  
Occidental Avenue S. Street Vacation Comparative Analysis**

	Street Vacation Impact	Comparison of Site Development Options
Pedestrians	<p>With the street vacation, pedestrians would divert from Occidental Avenue S. to either 1st Avenue S. or 4th Avenue S. depending on the origin or destination of the trip. The primary sidewalk impact of the vacation would occur on the east side of 1st Avenue along the project frontage.</p> <p>With an event at Safeco Field of approximately 40,000 attendance (consistent with the attendance level assumed in the No Action condition for Case S2), approximately 2,800 pedestrians use Occidental Avenue S. immediately south of S. Massachusetts Street, in many cases, walking down the center of the street, since no formal sidewalks exist.</p> <p>With the vacation, these pedestrians would largely shift to 1st Avenue S. sidewalks, primarily onto the eastern sidewalk. Pedestrian conditions would be free flow with the shifting of pedestrians from Occidental Avenue S. to 1st Avenue S. along the Arena frontage given the anticipated widening of the pedestrian zone with the Arena. Other sidewalk sections in the area would operate at restricted or severely restricted consistent with the No Action Cases. In addition, depending on the amount of pedestrians that shift to the west side of 1st Avenue S. between S. Massachusetts and S. Holgate Streets, this section of sidewalk could become restricted.</p> <p>During event conditions at the Arena, with an event at the Arena alone (Case S1)</p>	<p>The Arena would result in concentrated, though comparatively infrequent, pedestrian demands during event ingress / egress; pedestrian demands associated with the development under current zoning would result in lower, more evenly distributed pedestrian demands occurring throughout the day, and especially during lunch breaks.</p> <p>In either case, additional pedestrian demands would contribute to increased use of local sidewalks, including S. Holgate Street. Impacts of Arena related pedestrian peak demands are documented in the Pedestrian section; the impacts of the development under current zoning would be less, but also contribute to existing issues with pedestrian accessibility crossing the railroad tracks to the east. Office pedestrians could orient eastward to connect to bus and / or Link Light Rail service for commuting.</p>

	<b>Street Vacation Impact</b>	<b>Comparison of Site Development Options</b>
	restricted conditions are forecast along the frontage. Cases S2 and S3 would result in severely restricted flows; however, the resulting flow rate would be at or below the flow rates that commonly occur under event conditions without the Arena at other sidewalk locations in the SoDo area.	

## 2.7 Mitigation Measures

### 2.7.1 Mitigation Measures for Pedestrian Impacts Identified in May 2015 FEIS

There are generally two types of mitigation measures discussed: (1) physical improvements; and (2) programmatic improvements to be identified as part of the Transportation Management Plan (TMP).

#### Physical Capacity and Safety Improvements for Alternatives 2 and 3

Physical improvements are specific elements that have been identified to enhance the transportation infrastructure in a manner that directly or indirectly reduces the impact of the Arena, or reduces the negative consequences of project or cumulative conditions associated with the Arena.

#### Required Mitigation or Mitigation Included in Project Proposal for Alternatives 2 and 3

The following mitigation measures have been proposed by the applicant or have been identified to be required of the applicant as a condition of MUP approval:

- **Pedestrian Improvements.** Implementation of the following pedestrian improvements would contribute to increased safety and / or improved connectivity between the Arena and pedestrian connections to transit and / or offsite parking areas.
  - The north-south crossing of S. Atlantic Street at Occidental Avenue S. would be improved by:
    - Providing manual traffic control at the north-south crossing, and / or,
    - Developing a more-permanent improvement such as adding a staircase to the south side of S. Atlantic Street connecting to 3rd Avenue S.
  - To improve the connectivity and safety of the east-west pedestrian connection between the Arena site and 4th Avenue S., ArenaCo would be required to develop or implement one of the following:
    - Construction of a pedestrian bridge from the Arena along S. Holgate Street to the east spanning such that it clears the easternmost railroad

tracks. This would reduce the need for surface management pedestrian traffic control measures before or after events. The pedestrian bridge should directly connect to the Arena with a pathway wide enough to assure free flow of pedestrians during ingress and egress conditions.

- Alternatively, the applicant may provide operating shuttles or jitneys that follow a fixed route on a fixed headway that link the Washington State Ferry terminal, Link Light Rail and Transit Stations to / from the Arena. The intent of these jitneys and / or shuttles would be to provide an incentive for walk-on ferry passengers, transit users and persons parking in more remote offsite parking spaces. A specific shuttle plan would be developed as part of the TMP. The shuttle option would be coupled with pedestrian lighting and sidewalk improvements along 1st Avenue S. from S. Holgate Street to S. Lander Street, and along S. Lander Street between 1st Avenue S. and 4th Avenue S.
- **At-Grade Way-Finding System.** In coordination with other Stadium District stakeholders, ArenaCo could be required to contribute to development of a way-finding system to guide pedestrians and cyclists to the various venues in the Stadium District. To the extent possible this system will link with and through the Pioneer Square, International District, and SoDo.

## 2.7.2 Updated Mitigation Measures for Pedestrian Impacts Based on Additional Environmental Information

### Required Mitigation or Mitigation Included in Project Proposal for Alternatives 2 and 3

The following mitigation measures have been identified to be required of the Proponent as a condition of MUP approval:

- **Pedestrian Improvements.** Implementation of the following pedestrian improvements would contribute to increased safety and / or improved connectivity between the Arena and pedestrian connections to transit and / or offsite parking areas.
  - The north-south crossing of S. Atlantic Street at Occidental Avenue S. would be improved by:
    - Providing manual traffic control at the north-south crossing, and / or,
    - Developing a more-permanent improvement such as adding a staircase to the south side of S. Atlantic Street connecting to 3rd Avenue S.
  - To improve the connectivity and safety of the east-west pedestrian connection between the Arena site and 4th Avenue S., the Proponent has agreed to fund the construction of a pedestrian bridge:

- Construction of a pedestrian bridge from the Arena along S. Holgate Street to the east spanning such that it clears the easternmost railroad tracks. This would reduce the need for surface management pedestrian traffic control measures before or after events. The pedestrian bridge should directly connect to the Arena with a pathway wide enough to assure free flow of pedestrians during ingress and egress conditions.
- If completion of the Arena precedes the construction of the pedestrian bridge, the Proponent may provide operating shuttles or jitneys that follow a fixed route on a fixed headway that link the Washington State Ferry terminal, Link Light Rail and Transit Stations to / from the Arena to operate during Arena events. The intent of these jitneys and / or shuttles would be to provide an incentive for walk-on ferry passengers, transit users and persons parking in more remote offsite parking spaces. A specific shuttle plan would be developed as part of the TMP. The shuttle option would be coupled with pedestrian lighting and sidewalk improvements along 1st Avenue S. from S. Holgate Street to S. Lander Street, and along S. Lander Street between 1st Avenue S. and 4th Avenue S.

**At-Grade Way-Finding System.** In coordination with other Stadium District stakeholders, the Proponent could be required to contribute to development of a way-finding system to guide pedestrians and cyclists to the various venues in the Stadium District. To the extent possible this system will link with and through the Pioneer Square, International District, and SoDo.

## **2.8 Secondary and Cumulative Impacts**

### **2.8.1 Secondary and Cumulative Impacts Identified in May 2015 FEIS**

No secondary or cumulative impacts to pedestrians were identified in the Final EIS.

### **2.8.2 Updated Secondary and Cumulative Impacts Based on Additional Environmental Information**

There could be secondary or cumulative impacts to non-event pedestrians in the Pioneer Square and SoDo area due to additional pedestrians walking to and from the Arena. Non-event pedestrians may find sidewalks more crowded before and immediately after events at the Arena, however impacts would be similar or less than those that exist today with events at CenturyLink or Safeco Fields.

## **2.9 Significant Unavoidable Adverse Impacts**

### **2.9.1 Significant Unavoidable Adverse Impacts Identified in May 2015 FEIS**

Alternatives 2 and 3 - Increased frequency of events together with the proximity of the Arena to the S. Holgate Street rail crossings would increase the potential for conflict between

pedestrians and rail, east of the site. If a pedestrian overpass were constructed, this issue would be largely eliminated. With at-grade improvements together with increased manual control of pedestrians at crossings, the potential would be reduced but not eliminated.

### **2.9.2 Updated Significant Unavoidable Adverse Impacts Based on Additional Environmental Information**

No significant unavoidable adverse impacts for Alternatives 2 and 3. The increased frequency of events together with the proximity of the Arena to the S. Holgate Street rail crossings would increase the potential for conflict between pedestrians and rail, east of the site. The Proponent has agreed to fund the construction of a pedestrian overpass, and this issue would be largely eliminated. With the new pedestrian bridge, at-grade improvements together with increased manual control of pedestrians at crossings, the potential would be reduced to less than a significant unavoidable adverse impact.





## Section 3 – References

- Alaskan Way Viaduct Replacement Program Advisory Committee on Tolling and Traffic Management. 2014. Advisory recommendations for tolling the SR 99 tunnel. March.
- Artifacts Architectural Consulting and HistoryLink.org. 2013. *Seattle Center Historic Landmark Study*. Commissioned by City of Seattle, Seattle Center Redevelopment Department. March.
- CH2MHill. 2008. *SR 519 Intermodal Access Project, Phase 2: South Atlantic Corridor, Geology and Soils Discipline Report*. Prepared for the U.S. Department of Transportation Federal Highway Administration and the Washington State Department of Transportation.
- Council on Environmental Quality. 1997. *Considering Cumulative Effects under the National Environmental Policy Act*. Washington DC. January.
- Dames & Moore (URS). 1961. *Report of Soils Investigation, Proposed Space Needle, 4<sup>th</sup> Avenue North and Thomas Street*. Seattle, Washington.
- GeoMapNW Archives. 2013. *Pacific Northwest Center for Geologic Mapping Studies at the University of Washington*. Seattle, Washington. Accessed March 21.
- Federal Register. 2001. *Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes*. Washington. U. S. Environmental Protection Agency. Federal Register Vol. 66, No. 49, March 13, 2001.
- Hart Crowser. 2013. *Draft Preliminary Geotechnical Report, Seattle Arena, Seattle, Washington*. March 20.
- Heffron Transportation, Inc. 2015. *Technical Memorandum – New Seattle Arena*. August 28.
- International Code Council. 2012. 2012 International Building Code.
- Johnson, S.Y., compiler. 2004. *Fault number 570, Seattle fault zone, in Quaternary fault and fold database of the United States*. U.S. Geological website. Available at [http://gldims.cr.usgs.gov/webapps/cfusion/Sites/qfault/qf\\_web\\_disp.cfm?disp\\_cd=C&qfault\\_or=1340&ims\\_cf\\_cd=cf](http://gldims.cr.usgs.gov/webapps/cfusion/Sites/qfault/qf_web_disp.cfm?disp_cd=C&qfault_or=1340&ims_cf_cd=cf). Accessed March 2013.
- Johnson, S.Y., Dadisman, S.V., Childs, J.R., and Stanley, W.D. 1999. *Active Tectonics of the Seattle Fault and Central Puget Sound, Washington: Implications for Earthquake Hazards*. GSA Bulletin, v. 111, no. 7, p. 1042-1053.
- King County. 2011. *King County Department of Development and Environmental Services SEPA GHG Emissions Worksheet, Version 1.7 12/26/07 (Introduction Revised March 2011)*. Available at: <http://www.kingcounty.gov/property/permits/info/SiteSpecific/ClimateChange.aspx>. Accessed 2013.

- Liesch, B.A., C.E. Price, and K.L. Walters. 1963. *Geology and Ground-Water Resources of Northwestern King County, Washington*. USGS Division of Water Resources Water Supply Bulletin No. 20.
- National Basketball Association. 2013. Website: NBA.com. Accessed May 2013.
- Palmer, S.P., S.L. Magsino, J.L. Poelstra, E.L. Bilderback, D.S. Folger, and R.A. Niggeman. 2004. *Liquefaction Susceptibility Map of King County, Washington* WDNR, FEMA, and Washington Military Department Emergency Management Division.
- Puget Sound Clean Air Agency (PSCAA), 2012. *2010 Air Quality Data Summary*. Available at: [http://www.pscleanair.org/news/library/reports/2010\\_AQDS\\_Report.pdf](http://www.pscleanair.org/news/library/reports/2010_AQDS_Report.pdf). Accessed April 2013.
- Puget Sound Clean Air Agency (PSCAA). 2013a. PSCAA Website: *Air Pollution in the Puget Sound Region*. <http://www.pscleanair.org/airq/basics/criteria/default.aspx>. Accessed April 2013.
- Puget Sound Clean Air Agency (PSCAA), 2013b. *Regulation 1, Section 9.15, Fugitive Dust Control Measures*. Available at: <http://www.pscleanair.org/regulated/businesses/regulations.aspx>. Accessed April 2013.
- Seattle, City of. 1992. *Seismic Hazards in Seattle*. Planning Department. June.
- Seattle, City of. 2001a. *Seattle View Protection Policies Volume One: Space Needle Executive Report and Recommendations*. City of Seattle Department of Design, Construction and Land Use. April.
- Seattle, City of. 2001b. *Seattle View Protection Policies Volume Two: Space Needle View Inventory & Assessment*. City of Seattle Department of Design, Construction and Land Use. April.
- Seattle, City of. 2002. *Seattle Views: An Inventory of 86 Public Sites Protected Under SEPA (SMC 25.05.675)*. City of Seattle Department of Design, Construction and Land Use. May.
- Seattle, City of. 2007. *Citywide Skatepark Plan*. January 31.
- Seattle, City of. 2008a. *Seattle Center Master Plan Final Environmental Impact Statement*. June.
- Seattle, City of. 2008b. *2008 Seattle Community Greenhouse Gas Inventory*. City of Seattle Office of Sustainability and Environment. Available at: <http://www.seattle.gov/environment/documents/2008-community-inventory-fullreport.pdf>. Accessed April 2013.
- Seattle Fire Department. 2013. Website available at: <http://www.seattle.gov/fire/>. Accessed May 2013.

- Seattle Police Department. 2013a. Seattle Crime Stats by Police Precinct accessed via website. Accessed May 2013.
- Seattle Police Department. 2013b. *Major Crimes a 25-Year Review*.
- Seattle Police Department. 2013c. *Seattle Police Department 2013-2014 Proposed Budget*.
- Seattle Public Utilities. 2013. Resource Venture website available at: <http://resourceventure.org/>. Accessed May 2013.
- Shannon and Wilson. 2004. *Draft Environmental Impact Statement, Appendix T, Geology and Soils Technical Memorandum, SR 99: Alaskan Way Viaduct and Sea Wall Replacement Project*. Submitted by Parsons Brinckerhoff Quade and Douglass, Inc., March.
- Shannon and Wilson. 2005. *SR 99: Alaskan Way Viaduct and Seawall Replacement Project, Geotechnical and Environmental Data Report*. Submitted by Parsons Brinckerhoff Quade and Douglass, Inc. August.
- SRG Partnership Inc. and Threesixty Architecture. 2008. *NewArena Imagine the Future*. January 2008.
- Troost, K.G., D.B. Booth, A.P. Wisher, and S.A. Shimel. 2005. *The Geologic Map of Seattle – A Progress Report*. USGS Open File Report 2005-1252, Version 1.0.
- U.S. Census Bureau. 2010. U.S. Census 2010.
- U.S. Environmental Protection Agency. 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Washington, D.C. NTIS Number PB 206 717. December 31.
- U.S. Geological Survey (USGS). 2007a. *Quaternary fault and fold database for the United States*. Available at: <http://earthquakes.usgs.gov/regional/qfaults>. Accessed March 2013.
- USGS. 2007b. *Active Faults, Earthquake Hazards Program Regional Information*. <http://earthquakes.usgs.gov/regional/pacnw/activefaults/>. Accessed March 2013.
- USGS, 2012. *Quaternary Faults Web Mapping Application*. Available at: <http://earthquake.usgs.gov/hazards/qfaults/imsintro.php>. Accessed March 2013.
- USGS, 2013. *U.S. Seismic Design Maps*, Available at: <http://geohazards.usgs.gov/designmaps/us/application.php>. Accessed March 2013.
- Walsh, T.J., V.V. Titov, A.J. Venturato, H.O. Mofjeld, and F.I. Gonzalez. 2003. *Tsunami Hazard Map of the Elliott Bay Area, Seattle, Washington: Modeled Tsunami Inundation from a Seattle Fault Earthquake*. NOAA TIME Center Pacific Marine Environmental Laboratory, Seattle, Washington and Washington State Department of Natural Resources, Washington Division of Geology and Earth Resources Open File Report 2003-14.

- Washington State Department of Ecology (Ecology). 2013. *Air Quality Maps of Maintenance Areas*. Available at: [http://www.ecy.wa.gov/programs/air/other/namaps/Web\\_Map\\_Intro.htm](http://www.ecy.wa.gov/programs/air/other/namaps/Web_Map_Intro.htm). Accessed March 2013.
- Washington State Department of Natural Resources. 2012. *Subsurface Geology Information System*, Available at: <https://fortress.wa.gov/dnr/geology/?Theme=subsurf>. Accessed March 2013.
- Washington State Department of Transportation. 2011. *Alaskan Way Viaduct Replacement, Final Environmental Impact Statement and Section 4(f) Evaluation*.
- Washington State Department of Transportation. 2012. *Geotechnical Design Manual, M46-03.07*. April.
- Washington State Major League Baseball Stadium Public Facilities District. 1996. *Washington State Major League Baseball Stadium Project Final Environmental Impact Statement*. August 28.
- Yount, J.C., G.R Dembroff, and G.M. Barats. 1985. Map Showing Depth to Bedrock in the Seattle 30' by 60' Quadrangle, Washington. U.S. Geological Survey Miscellaneous Field Studies Map MF-1692.
- Yount, J.C., G.S. Vick, and G. McCoy. 1990. *Geotechnical Drill-Hole Logs from the Southern Seattle Area, Washington*. U.S. Geological Survey Open-File Report 90-90.1

## Section 4 - Glossary

**Air emissions.** Gas emitted into the air from industrial and chemical processes, such as ozone, carbon monoxide, nitrogen oxide, nitrogen dioxide, sulfur dioxide and others.

**Air pollutant.** Any substance in air that could, in high enough concentration, harm humans, other animals, vegetation or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases or a combination thereof. Generally, they fall into two main groups: 1) those emitted directly from identifiable sources; and 2) those produced in the air by interaction between two or more primary pollutants, or by reaction with normal atmospheric constituents, with or without photoactivation. Exclusive of pollen, fog and dust, which are of natural origin, about 100 contaminants have been identified and fall into the following categories: solids, sulfur compounds, volatile organic chemicals, nitrogen compounds, oxygen compounds, halogen compounds, radioactive compounds, and odors.

**Air quality standards.** The level of pollutants prescribed by regulations that may not be exceeded during a given time in a defined area.

**A-weight.** A standard frequency weighting to stimulate the response of the human ear.

**Congestion.** A condition characterized by unstable traffic flows that prohibit movement on a transportation facility at optimal legal speeds. Recurring congestion is caused by constant excess volume compared with capacity. Nonrecurring congestion is caused by unusual or unpredictable events such as traffic accidents.

**Cumulative effect.** The effects on the environment that result from the incremental consequences of an action when added to other past, present and reasonably foreseeable future actions.

**Emission.** Pollution discharged into the atmosphere from smokestacks, other vents and surface areas of commercial or industrial facilities, and from residential and mobile sources.

**Environmental impact statement (EIS).** A document that identifies and analyzes, in detail, environmental impacts of a proposed action. As a tool for decision-making, the EIS describes positive and negative effects, and lists alternatives for an undertaking.

**Grade.** The natural surface contour of a lot. Grade can be modified by minor adjustments to the surface of the lot in preparation for construction.

**Greenhouse gases.** Greenhouse gases (GHGs) are the gases present in the earth's atmosphere which warm near-surface global temperatures through the greenhouse effect. The principal greenhouse gases are carbon dioxide, NO<sub>x</sub>, methane, and three groups of high-warming potential gases—hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

**Height.** Measurement from grade.

**Impervious surface.** Surface through which water cannot percolate.

**Leq.** Equivalent sound level. The level of a constant sound which, in a given time period, has the same energy as does in a time-varying sound.

**Level of service (LOS).** A gauge for evaluating system performance for roadways, non-motorized and other transportation modes. For example, roadway measures of level of service often assign criteria based on volume-to-capacity ratios.

**Mitigation measures.** Actions taken to reduce adverse effects on the environment, usually implemented under the State Environmental Policy Act.

**MUP.** Master Use Permit. The document issued to a project applicant, recording all land use decisions made by the DPD on a master use application. The term excludes construction permits and land use approvals granted by the City Council, by citizen boards or by the state.

**National Ambient Air Quality Standards (NAAQS).** Standards established by the US Environmental Protection Agency that apply to outside air quality throughout the country.

**Nitrogen oxide.** A gas formed by combustion under high temperature and high pressure in an internal combustion engine. Changes in nitrogen dioxide in the ambient air contributes to photochemical smog.

**Non-attainment area.** Area that does not meet one or more of the National Ambient Air Quality Standards for the criteria pollutants designated in the Clean Air Act.

**Pedestrian Zone.** For the purpose of this Addendum, a pedestrian zone denotes the contiguous walking surface unobstructed by permanent intrusion. A pedestrian zone may include both public and private property.

**Public Sidewalk.** A public sidewalk is that portion of a pedestrian zone located entirely within public right-of-way.

**State Environmental Policy Act (SEPA).** State legislation passed in 1974, which establishes an environmental review process for all development projects and major planning studies prior to taking any action on these projects. SEPA permits early coordination to identify and mitigate any significant issues or impacts that may result from a project or study.

**SOV.** Single Occupant Vehicle means a motor vehicle occupied by one (1) person, excluding motorcycles.

**Transportation Management Program (TMP).** A required set of measures to reduce a project building's demand on transportation infrastructure. These measures typically seek to discourage commuting via single-occupant vehicle and encourage alternative commute modes. TMPs must be approved by DPD, SDOT, and the owner of the project building as a condition of the project building's Master Use Permit.

## **Section 5 - EIS Addendum Distribution List**

### **5.1 State Agencies**

Department of Community Development Historic Preservation Office  
Department of Ecology, Environmental Review Section  
Department of Transportation (WSDOT)

### **5.2 Regional Agencies**

Port of Seattle  
Puget Sound Clean Air Agency  
Puget Sound Regional Council  
Sound Transit

### **5.3 Local Agencies**

King County Attorney  
King County Department of Transportation/Metro Transit

City of Seattle

City Attorney, Attn: Mr. Robert Tobin  
Department of Planning and Development, Attn: Mr. John Shaw  
Department of Neighborhoods, Landmarks Preservation Board, Attn: Ms. Karen Gordon,  
Seattle Historic Preservation Officer  
Fire Department  
Parks Department  
Police Department  
Seattle Center, Attn: Ms. Jill Crary  
Seattle Public Utilities, Environmental Review Section  
Seattle Department of Transportation

### **5.4 Libraries**

Seattle Public Library – Central Library  
Seattle Public Library – Douglass Truth Branch  
Seattle Public Library – International District/Chinatown Branch

### **5.5 Newspapers**

Seattle Daily Journal of Commerce  
Seattle Times

